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ERRATA.

Page 59, in the first three prescriptions, the *periods, after* the figures expressing the quantities, should be erased.

Page 59, third line from bottom, for "grams 13." read "grams .13"

Page 193, in foot note, for "applies" read "apply."

Page 204, tenth line from bottom, for "appearances" read "appliances."

Page 271, the resolution beginning at the bottom of the page was adopted by the society on recommendation of the Health Commission.

Page 285, eighteenth line from top, for "Mr." read "Dr."

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ADDRESS OF THE PRESIDENT.

Problems in Relation to the Prevention of Disease.

J. R. WEIST, A. M., M. D., RICHMOND, IND.

A custom of this Society requires of its President a public address at its annual meeting, and I am here to discharge the duty thus imposed on me.

Neither the constitution of this Society nor custom places a limit to the choice of a theme, and I have been much embarrassed in reference to the selection of a subject. I have been led to believe, however, that a departure from the line of thought, usually followed by my predecessors on occasions of this kind, would be acceptable to you, and that to a subject involving some of the problems formulated by modern scientific thought a higher interest would attach, than to one dealing only with questions that are daily considered.

While we, as physicians, must continue to give our chief thought to what are called the "practical questions of medicine," that we may relieve the suffering, and thus lessen the sum of human sorrow, we will fail in the discharge of our whole duty if we do not recognize that outside of the sick chamber and beyond the limits of hospital wards lies our highest work—work that has for its object the prevention of disease, not its cure.

The happiness and the progress of mankind are the end at which

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all aim, who are striving to be of use in the world, and we should seek knowledge that we may act; that we may put in motion the forces of the universe, not only for our own preservation and comfort, but for the benefit of all men who are living in the world with us, and are to come after us. We, as physicians, more than all other men, both because of the position we claim for ourselves, and that accorded to us by the public, should never forget this, the real end of human action. Divine honors have been paid to physicians in the past, and may be earned in this realistic age; but to gain them, the nobility of the profession must never be forgotten. It is true, unfortunately, that in the ranks of the medical profession are found some who engage in medical practice as a mere means of money-getting, bringing thereby personal demoralization and shame to the profession—"best things turned to basest ends breed the greatest corruption." Let us hope that as the years go by the number will constantly grow less, who look upon the suffering and feebleness of humanity, appealing in anguish and helplessness for relief, with such selfish motives. To this class, who value knowledge only for the power it gives them to secure the confidence of men, that they may prey upon the unfortunate, I am not speaking; but to you, earnest workingmen, assembled here in the hope of acquiring new knowledge that will enable you to lessen the tears that fall, and hush the groans that escape from those upon whom disease has fallen, and interpose a shield to ward off the dangers that threaten the physical, mental and moral health of the people.

There is but one central thought in what I have to offer you, and that relates to the prevention of disease. It is only just to say in the beginning that I have but few original ideas to give you; I can hardly hope to do more than gather here and there a thread of thought spun in the brain of some wise thinker, and from it weave a web that may serve some useful purpose.

Surrounded as we are by the luxuries of civilization, and the wonderful achievements of science, we can hardly realize without stopping to consider the subject how distinctly the power of knowledge has shown itself in the triumphs over disease by sanitary reforms. While Atropos still inexorably cuts the thread of life, Lachesis may be propitiated and the length of her spinning in-

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creased; thus a large part of the mortality of mankind is subject to control by human agencies. For evidence that the inroads of disease and death may be successfully resisted and the duration of life increased, we need only recall for a moment some of the many facts of history in relation to the prevalence of disease in the cities of antiquity, in those of the middle ages, or of others in modern times, and compare them with what are being written of the same cities to-day.

Rome in the days of her glory, when she was the capital of civilization, was frequently almost depopulated by the ravages of pestilence; often 10,000 of her citizens died in one day; and her history as told by Plutarch and Livy is little else than a story of death by war and disease. The former of these historians tells, also, how 185,000 men of the Assyrian army died in one night at the siege of Jerusalem. Herodotus has recorded the destruction of the army of Xerxes, the victims within a few days numbering 150,000. Thucydides tells in forcible language of the plague of Athens, and of the despair caused by the mysterious disease. In Procopius may be found the history of the plague that in the time of Justinian prevailed at Constantinople, when, for four months, 10,000 inhabitants frequently perished in one day. The magnificent capitals bordering the Mediterranean and Adriatic seas were frequently devastated by plague and pestilence.

There is nothing more terrible written in the history of the sufferings of mankind than the facts in relation to the visitation of the "Black Death," that devastated all Europe during the middle of the fourteenth century. It is said that in China 13,000,000 people died, and it was reported to Pope Clement at Avignon, that throughout the East—except China—more that 23,000,000 died, and in Europe 25,000,000. In Venice, 100,000 died; in London, 100,000; in Florence, 60,000,* while many other cities were depopulated and almost forsaken.

Boccacio draws a vivid picture of the horrors of Florence during the prevalence of this disease.† The sick were abandoned by their relatives; the citizens fled in terror at sight of each other; the

*For most of these facts I am indebted to Bascome's "History of Epidemic Pestilences from the Earliest Ages," London, 1851, and Hecker's "Epidemics of the Middle Ages," London, 1859.

†Decameron (Introduction).

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corpses were piled in heaps at every door, and the noise of insane revelry mingled with the universal woe. The disease did not confine itself to the land, thousands of sailors died, and ships without crews drifted helplessly before the wind, in the Mediterranean and North seas, carrying the plague wherever they touched the shore.* During the prevalence of this plague when:—

> "The all surrounding Heaven, the vital air
> Was big with death,"†

Eight thousand of the inhabitants of London died in one week, and 50,000 bodies in the space of a few months were interred in one burial ground alone.

In modern times, and in our own country too, many cities have been ravaged by epidemic disease. The picture, drawn in one of Charles Brockden Brown's novels,‡ of the scourge of yellow-fever as it appeared in Philadelphia, in 1800, is full of dark shadows—"the desolate city with its closed and abandoned houses; the sick and dying lying in the streets,"—reminds us of that from the pen of the great Italian novelist.

From the steaming plains of India, about whose pilgrim-shrines cholera seems always to linger, this fatal disease has repeatedly turned westward and marched with irresistible power, regardless alike of physical obstructions or political boundaries, to avenge the violated laws of health on cities thousands of miles distant. "The visitation of cholera in 1831–32 to Western Europe was a triumphal march of this spirit of destruction; it brought with it political discontent, intolerable misery, the sacrifice of thousands of lives."§ Dr. Arnold saw in it the final blow to the prosperity of England. Macaulay in his letters, describes "the terror of London and the perils of Holland House." The Atlantic, with its broad stretch of three thousand miles of tossing waves, failed to stay the progress of the invader, and on the banks of the Hudson, the Delaware, and the Mississippi, the fatality was nearly as great as on those of the Ganges and the Indus of Hindoostan. Some of the problems in relation to these terrible epidemic diseases have been solved, and there

*Hecker.
‡Art of Preserving Health. John Armstrong. M. D., London, 1744.
†"Arthur Mervyn," 1800.
§Eugene Lawrence, *Harper's Weekly.*

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is reason to hope that visitations such as I have mentioned will not be repeated; knowledge is progressive, and before it there has been a steady retreat of epidemic diseases. Civilization has driven the plagues of the middle ages out of Europe; and now, as the laws of health and disease are becoming better understood, it seems possible that the two chief epidemic diseases of modern times, the yellow fever and cholera, may be assailed in their native haunts. Much and careful study is being given the problems concerning them, and we are now beginning to understand how Havana, Vera Cruz, and other centers of the yellow fever pestilence, may be made healthy, and the commerce of the western world allowed to go on without interruption, and without carrying with it the seeds of death. A scientific examination of the rise and progress of cholera in Hindoostan has been made, resulting apparently in the discovery of its cause in the impure water used by the crowded inhabitants of the Hindoo villages and cities, and that a "new system of aqueducts and irrigation can be introduced that will change the whole sanitary condition of Hindoostan and render this birth-place of the most terrible of modern diseases healthy as the most favored portions of India."

In the church of Santa Marie Della Salute, at Venice, there is a beautiful group in marble representing the Virgin banishing the demons of the plague, the church itself being the result of a covenant to erect a memorial in honor of the Virgin, so soon as a plague then prevailing should be stayed. It is said that on the same day the covenant was entered into by the Doge Contarini and the Patriarch Tiepolo the plague ceased.* Men believed this story of miraculous intervention, and others of like import, for ages; but a new era has dawned upon the intelligence of the world, and it is now known that the great decline in the ravages of pestilence during this century is because increased knowledge has brought about a better sanitary condition of communities and cities, and not because of fortuitous circumstances outside of man's control. This may be shown by a reference to the ravages of diphtheria in certain parts of Russia, where ignorance prevails and sanitary laws are unknown. It is stated that during the past year, within the space of a few months, there were

*"Cook's Hand Book to Venice."

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in two provinces of this empire 150,000 deaths of this disease.* The terrible visitation of yellow fever on Memphis during the past two years furnishes another example. In this city every sanitary law seems to have been neglected, and in consequence death reaped an abundant harvest; but even here, where the disease raged with a virulence that in former times would have infected the entire Mississippi valley, the precautions of science checked the spread of this disease.

While the evolution of civilization and the increase of scientific knowledge have, to a great extent, limited the extension of epidemic disease, and done much in the way of prevention of other forms of disease, and thus greatly increased the average duration of human life, and augmented its physical power, very much more may be done in this direction.

Men, generally, no longer believe that all disease is brought about by the direct and special agency of the deity, and therefore no longer look upon prevention and curative measures as "blasphemous interferences with the will of God." Even yet, however, the popular mind is overspread by the dark shadow of ignorance, and the belief lingers that disease is somehow produced by evil causes that we can only defend ourselves against with drugs, their destruction lying not within our power. By many, disease is still looked on with a feeling of superstition, and not "with the calm confidence of security which a thorough knowledge of cause and effect alone can give." But the human mind is slowly awakening to the truth that in relation to disease, as to every other natural phenomenon, nothing happens by chance, but all are subject to unchangeable law; that vital actions are not exceptional and unlike all others, and therefore subject to different laws; that birth and death, health and disease, are but "parts of the ordinary stream of human events; and that the living body is a mechanism, the proper working of which we term health; its disturbance, disease;† its stoppage, death." Between the varying phenomena of health and disease there are no clearly defined limits, both are governed by the same laws, and disease is to be studied precisely as we study the vital processes of which they are

* Medical Record, New York.

†Huxley, "Elementary Instruction in Physiology." *Popular Science Monthly*, October, 1877.

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but a part. This knowledge of the right method of study has much simplified many of the problems presented by disease.

The right working of the human machine depends upon many and complicated conditions; over some of these we can have no control, while others can be greatly modified by our own actions. The scientific physician is seeking "to know the range of these modifiable conditions and how to influence them towards the maintenance of health and the prolongation of life." When these are generally known, man will exhibit the same power in subduing in his own body the one great obstacle to his well being, that he has shown in modifying those existing in the external world; he will then become healthy and cease to be the most sickly of animals.

It is true, as Dr. Billings observes, we do not know "to what extent the prevention of disease, the prolongation of life, and the improvement of the physical aud the mental forces in man may be carried,"* but we do know that much more may be accomplished in this direction by putting into practice the knowledge that has been already acquired of the laws governing health and life; we do know that in the United States every year tens of thousands of lives might be saved; that a much larger number "of cases of sickness occur which might have been prevented; that a vast amount of unnecessarily impaired health and physical disability exists among those not confined by sickness; that these preventable evils require an enormous expenditure and loss of money, and impose on the people unnumbered and unmeasurable calamities, pecuniary, social, physical, mental and moral, which might be avoided; that means exist within our reach for their mitigation or removal; and that measures for the prevention will effect more than remedies for the cure of disease."†

At present the only standard available, by which the health of a community or State can be measured, is the death rate; this, while an important test, is imperfect, but it is the best that can now be employed, and seems to show, at least, the importance of the subject. Applying the best standards obtainable of the normal rate of mortality, to that of the United States for the year ending June 1st, 1870, shown by the census of that date, it is seen, says Dr. Billings, that "the total annual loss of life in the United States from

* "Introduction to Hygiene, and Public Health." New York, 1880

† "Report on a General Plan for the Promotion of Public and Personal Health." Boston, 1850.

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causes well known to be preventable is certainly over 100,000 annually. In addition to these unnecessary deaths, there are probably 150,000 persons constantly sick in this country from causes which we have good reason to think are preventable, and we may accept as a basis of calculation, that the productive efficiency of the average life in this country falls short of the normal amount by at least thirty per cent."*

From the time of the old Greek philosopher who affirmed centuries ago "that there is nothing better in a State than that her citizens be rendered the best possible," the wisest observers have continued to teach, that "the people themselves are by far the most important capital of a state, and that the amount of this, stored up in the living generation, surpasses all other kinds in quantity. Every injury to the physical condition of the people is a loss of the noblest capital of intelligence and physical strength of the nation and an absolute destruction of it," and therefore of wealth and power. "History," says Virchow, "has more than once shown that the destiny of a nation depends upon its condition of health and energy, and it is plain the pathological history of a people is inseparable from its civilization. Fearful rates of mortality are writings on the wall in which the statesman of capacity can read the disturbing element which has invaded the life of the nation, and which even a careless government can not afford to overlook."

In every community there exists a direct relation between power and wealth and the healthy, and therefore the producing class, and the unhealthy or non-producing class. From this point of view, the prevention of disease and the lowering of the rate of mortality involve questions of the greatest pecuniary importance. "Accepting either the calculations of Dr. Jarvis or Dr. Farr, it can be shown that the direct pecuniary loss to this country on account of preventable sickness and mortality is certainly over $100,000,000 annually, and this without taking account of expenditures incurred on account of sickness, or the unusual losses due to great epidemics, both from waste of life and injury to commerce."† During the prevalence of epidemics these losses are greatly increased, and may equal, or even exceed the cost of war. The prediction made

* "Introduction to Public Hygiene."
† Dr. Billings.

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by the *New Orleans Medical Journal*, that "the vital and material losses of the Southern States, by the epidemic of yellow fever in 1878, would exceed the costs of the Mexican war" was fully verified. This war cost 15,350 human lives, and—directly and indirectly—$123,000,000, the money loss being more than repaid by the California revenues of the next ten years, while "the total deaths by yellow fever from August 5th to October 5th, 1878, was 17,012," and the "direct and indirect losses (without any prospective compensation), of the city of New Orleans alone, $16,000,000."* The total loss to the Mississippi valley, from Memphis to the Delta, by this epidemic, was estimated at $160,000,000. To this enormous sum should be added the large expenditure made elsewhere to prevent the introduction of the disease, and the more than four and a half millions of dollars in money and stores subscribed by generous-minded people in aid of yellow fever sufferers.† That it was within the power of sanitary regulations to prevent this great loss of life and treasure is shown by the fact, that while New Orleans was occupied by the United States forces for more than two years during the late war, more than 100,000 unacclimated soldiers were stationed in, or passed through the city, without a single case of yellow fever originating there.

Another excellent example of the loss that may be suffered by a single city from a failure to employ scientific knowledge for the prevention of disease, was furnished by Dr. Benjamin Lee in a paper on the cost to the city of Philadelphia of the small-pox epidemic which existed there in the winter of 1871–72. The direct and indirect pecuniary loss is placed at over $21,848,000.‡ It is well known that the problem relating to the prevention of the horrible disease, small-pox, has been solved, and that the disease may be easily and almost certainly prevented in nearly every case. This epidemic might have been prevented, and Dr. Lee places the cost of an epidemic and the cost of prevention in startling contrast when he figures the latter at less than $800,000, a difference of more than $21,000,000.

The annual loss to our own State from preventable sickness and

* F. L. Oswald, M. D., *Popular Science Monthly*, Dec., 1878.

† See table showing sums contributed by various States, "American Almanac" for 1880.

‡ "Proceedings of American Health Association."

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mortality, could it be correctly calculated, would create astonishment. A calculation based on the same data used in estimating the preventable loss of life and money in the United States by disease, gives this result: An annual unnecessary loss of more than 5,000 lives, and more than 6,000 persons constantly sick from causes which are preventable; this sickness and mortality entailing an annual loss to the State of more than $4,000,000. A calculation like this makes it at once apparent that ignorance and carelessness regarding the preservation of health and life tax enormously the pecuniary resources of the State.

So long as the discoveries of sanitary science and their application were for the prevention of physical and mental pain merely, the physician was chiefly interested; but now that the pecuniary questions involved are becoming better understood, the problems of sanitary science are of the greatest practical importance to the political economist and to the legislator. Is it not clear that our politicians would do well to study politics less and pathology more? That the law-makers of Indiana fail to understand the necessity for sanitary legislation has been demonstrated by the reception given to suggestions in this direction from the wisest physicians of the State. There are two reasons for the failure that has so far attended attempts at sanitary legislation in this State. The first is: the elementary knowledge—to say nothing of the scientific knowledge—of the average politician, does not enable him to grasp questions of such magnitude as are involved in proper sanitary legislation. The second is: physicians are not agreed as to what is needed, for many of them, as well as the public, constantly place the sanitarian in a false position. He does not claim that his knowledge is perfect; that the recommendations he makes are the best that can be made; only that they are the best that can be made *now;* he admits that a perfect code of sanitary rules can only be framed after much further study and observation; whereas the public demands perfect results at once, tolerating neither mistakes nor failures. The truth of this statement is well shown in the criticisms made by newspaper writers, and others equally deficient in information concerning the workings of the National Board of Health, and, indeed, of all other organizations having similar purposes. While it is true that sanitary science is yet in its infancy, and the

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annual waste of life and the pecuniary losses resulting from preventable sickness are still enormous, the medical profession can justly point with pride to what has already been accomplished, for to it belongs all the credit that attaches to what has been done for the prevention of this waste of life and money. The study of disease that has culminated in the knowledge we have of its various forms, and the means for its prevention or mitigation, has been made by physicians, and generally without any other reward—real or prospective—than the personal satisfaction that always follows the conviction of having extended the boundaries of knowledge, and the approval of conscience that comes after the performance of labor for the general good of mankind. It is owing to their efforts that the people are becoming aroused to the importance of these questions concerning their health and their lives, and that a public sentiment is being created that demands of those vested with the authority of government a recognition of the claims of scientific medicine, and a provision by the State of means for carrying to practical results the recommendations made for the preservation of the people. This is being done to some extent. By act of Congress, March 3, 1879, provision was made for the establishment of a National Board of Health. This was organized April 2, 1879. It consists of one member from the U. S. Marine Hospital Service, one from the Medical Department of the U. S. Army, one from the Medical Department of the U. S. Navy, one from the U. S. Department of Justice, as legal adviser, and seven medical gentlemen from various parts of the country, selected because of their reputation as learned and active sanitarians. Since its organization, this Board has worked with much industry and intelligence. They invited the chief health officers of the larger cities, and the more prominent sanitarians of the country to a conference at Atlanta, Georgia, in May last, at which a free discussion and interchange of views were had. They obtained the advice and assistance of the American Health Association, and of the National Academy of Science. By act of Congress, June 2, the power of the Board was enlarged, and an appropriation of $500,000 made, to be used in efforts to prevent the introduction and spread of contagious, infectious and epidemic diseases. Immediately sanitary inspectors were assigned to different parts of the Atlantic and Gulf coasts;

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others were sent to Memphis and other points where yellow fever made its appearance, to observe and report the actual condition of affairs, and act as the representatives of the Board to the State and local sanitary organizations. A commission was sent to Cuba, where yellow fever was observed from July 4 to October 4, resulting in a valuable report. The sanitary laws of the nation and of all the States have been collated, and these found to be so inharmonious as to strongly exhibit the necessity of a central competent head to unify legislation on State medicine, so that vital statistics and other sanitary information may be obtained by a system that will admit of a comparison and collation. Under direction of the Board the character and the quantity of organic matter in the air are being thoroughly studied; also the value of the various disinfectants; the adulteration of drugs and foods, and the diseases of food-producing animals; the best and cheapest methods of constructing sewers. The results of this last inquiry are already seen in Memphis, where better service is being done with sewers costing $225,000 than with the old, costing $500,000. A sanitary survey of Eastern New Jersey, New York Harbor and Memphis is now in progress. An investigation into the hygienic condition of the U. S. Mercantile Marine is being made; also as to the nature and cause of diphtheria; and the influence of soils on health. In making these inquiries, in addition to their own number, they have secured the services of men of the highest eminence in their specialties and of more than national reputation.

The very existence of this Board is an evidence that the labors of the scientific physician are beginning to bear fruit that will be for "the healing of the nation." And I make this apparent digression to notice the work of the National Board of Health for the additional reason that the claim has been made that the Board is merely a political machine, and has accomplished nothing. It is true these adverse criticisms have always been made by those ignorant of the character of the men composing the Board, and of the work done, yet, as a part of them have emanated from medical men, it seems proper to call your attention to the subject, in order that your influence may be exerted for the continuance of the work that promises to solve many of the complex problems that still remain in connection with the prevention of disease, and for the

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reason that it serves to indicate the progress we are making in the way of sanitary reform.

If any other evidence is needed to show that an advance is being made in the education of the people to the importance of sanitary legislation, it may be found in the fact that the first State Board of Health was created in Massachusetts in 1869; now eighteen States have such Boards, while local Boards of Health exist in every city and important town of the Union; and that a much larger number of bills relating to medical matters are before Congress and the different State legislatures than ever before. Congress is asked for legislation to give the National Board of Health greater power and a wider scope of influence; to place the Marine Hospital Service on a higher basis. The State Department demands that its foreign officers shall be given the additional duty of keeping "a watch upon the sanitary condition of the ports with which our country is in communication." The subject of inter-state commerce is being discussed and seriously examined on account of the medical questions it involves. "In the States the importance of State and local Health Boards is becoming more widely appreciated. Questions of medical registration, medical education, medical charity, and even of proper medical treatment in public institutions, occupy the attention of our law-makers, and, with the other branches of State medicine, make a very respectable part of the legislator's work."* All this indicates change and progress. The influence of scientific medicine is extending. "It reaches where it never reached before, and it is rising to a prominence in political and social matters which is now becoming noticeable, and which every physician ought personally to appreciate and understand."†

My predecessor in this office told you last year, in eloquent language, of the special needs for medical legislation in Indiana, and of the duty of the profession in the way of conveying information to the people on the vital questions of health and life, for, as he then said: "When the relations of legislation to sanitary protection are universally recognized, the people will imperatively demand this protection, for the cause of sanitary legislation is the cause of humanity itself."‡ Before we can appeal, however, either

*George F. Shrady, M. D., *Medical Record*, New York, March 13, 1880.
†Shrady.
‡Ben. Newland, M. D., Presidential address, Indiana State Medical Society, 1879.

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to the people or to our legislators, with any hope of success, it must be made apparent that our efforts are in the interests of the people, and not in the interests of an individual or corporation.

Having now directed your thoughts to the great waste of health and life from ignorance or neglect of sanitary conditions, and mentioned some of the evidences of improvement in this direction, I crave your earnest attention to certain other problems that should be carefully considered by every physician.

All the influences affecting the birth, development, growth and decay, whether of the individual, the nation or the race, should form a part of the studies of the physician, falling as they do within the province of the science of hygiene. The physician, then, who seeks to influence the current of life, for the betterment of mankind, comes of necessity directly to questions that require for their solution a knowledge of the comparatively new sciences of biology and sociology. The one—"the science of life"—deals with all the phenomena pertaining to the genesis and evolution of living things; the mechanism and results of life; the questions of growth, decay, heredity, and variation; the other, considers the laws that regulate society, the actions of men living together, and the institutions they create; the modern exponent of which is Herbert Spencer, who, taking up the analogy between society and man, imperfectly seen by Plato, Hobbes and Pascal, and perfecting the lines sketched by Comte, has changed the whole face of sociology.

Man, although standing highest in the scale of animal development, is not exempt from the operation of the natural laws governing all the other forms of life. With him there is the constant strife for place shown by all living things, but he alone, because of his superior intelligence, modifies the operation of the law that determines the "survival of the fittest;" and it is because of this power that many and difficult problems arise. I need not consider the questions relating to the origin of life and evolution, only the one "biological law by which all beings endowed with life tend to repeat themselves in their descendants." And even this I need only mention, as it is generally recognized that not only physiological and psychological qualities are transmitted from parent to offspring, but acquired pathological conditions and qualities as well; that the individual bears "the traces and consequences of his

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parentage throughout the whole of his compound nature," and during his entire life:—

> "How new life reaps what the old life did sow;
> How where its march breaks off its march begins;
> Holding the gain and answering for the loss;
> And how in each life good begets more good,
> Evil fresh evil." *

The historians and poets of ancient times generally gave acceptance to this doctrine; Herodotus believed in the heritage of moral and intellectual attributes; Homer indicates it in the address of Minerva to Telemachus, and evidences of a belief in it may be found in Horace and Juvenal. The Bible abounds in recognitions of moral heritage, while in the Hindoo religious system hereditary resemblance is made almost the equivalent of personal identity. These teachings, with more modern ones, together with the testimony of statistics and the examples of national decay seen in Egypt, Greece and Rome, have usually not prevented the moralist and the legislator from ignoring, as to its practical bearing, the influence of heredity; but now, under the influence of the teachings of Darwin, Lucas, Bruce Thompson, Morel, Maudsley, and Herbert Spencer, it is recognized to be of the highest importance to the physician, the moralist and the legislator, and it is upon medical men that largely rests the duty of carrying this knowledge to the people, not only that the race may be preserved, but carried to a higher development. The philosopher in his closet may formulate the great truths of science, but only he who lives out in the open world among the people can make them lead to practical results.

While the influence of heredity in the production of consumption, epilepsy, insanity, and some other forms of disease is generally admitted, the masses of the people are comparatively ignorant of the almost universal influence it has over the physical, mental and moral conditions. Now, that there is a general acceptance of the doctrine that mental and moral phenomena rest on a physical basis, that they are as much the result of organic conditions and changes going on in the body, as growth and decay, the recognized boundaries of diseased action are greatly extended. Insanity, pauperism

* Edwin Arnold's "Light of Asia," 6th Book.

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and crime are as much the result of physical degeneration as are scrofulosus or tuberculosus, and demand therefore equal study on the part of the physician, for from him, more than from the moral teacher, must the remedy come.

While the average duration of human life is much greater than it was a century ago, it is growing less, despite of our improved methods of living, our mechanical and scientific discoveries, and increased knowledge. The ratio of increase of population is declining, while that of consumption, insanity, syphilis, pauperism and crime is increasing.

The increase of population in the United States, from 1860 to 1870, was 29 per cent., while the increase of consumption was 42 per cent. The increase of population in the State of New York for the same period was 13 per cent.; that of consumption, 41 per cent. Indiana gained in population 24 per cent.; consumption increased 55 per cent. Insanity shows a similar increase. In the United States there was in 1860 one insane person to every 1,350 inhabitants; in 1870, one to every 1,030. In Massachusetts, in 1860, one to 590; in 1870, one to 547. In New York, in 1860, one to 918; in 1870, one to 690; and in Indiana, in 1860, one to 1,307; in 1870, one to 1,287.

Dr. Charles A. Lee said before the Social Science Association: "Statistics abundantly show that, both in this country and in Great Britain, there is a progressively increasing ratio of lunatics to the whole population, and the estimate of 45 per cent. increase here, as in England, in the last ten years, is very probable"—"especially is insanity increasing in the United States, among the middle and lower classes."*

From 1860 to 1879 the increase of idiots in the United States was 44 per cent.; in Indiana, 49 per cent.

The extent to which syphilis prevails and the rate of its increase are difficult to determine, because of the disgrace connected with the disease, but the published reports of the various correctional institutions, hospitals, and charities, indicate that its virus is yearly spreading more rapidly, poisoning the blood, disorganizing the body, and inflicting a heritage of shame and disease upon the innocent.

In relation to intemperance, I present no figures, as I have been

* Transactions American Social Science Association.

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unable to determine whether or not it is on the increase; no new facts, however, are needed to prove this disease one of the greatest importance, considered either as a consequence or a cause of physical degeneration.

No proof, perhaps, of the statement that pauperism and crime are increasing relatively faster than population, is needed, yet reference to some facts showing how rapidly the cost of the criminal and dependent class is increasing may be proper, appealing, as they do, very forcibly to all who are interested in the vital or pecuniary welfare of the State.

The cost of pauperism in the United States, as shown by the last census, was more than twice as great in 1870 as in 1860. In Indiana, nearly three times as great. In Massachusetts, the cost of the maintenance of the insane and pauper class has doubled in ten years, their support having cost in 1879, about $3,000,000.*

In 1877, the value of the real estate and personal property of the State, county, and incorporated charities of the State of New York was more than $32,000,000, while on improvements and for support more than $8,000,000 was expended during the year.† At a recent meeting of the New York State Board of Charities, it was stated that the total appropriation by the city of New York, for the department of public charities and correction, was, in 1865, $1,125,000, while for the year 1880, it was $2,600,000. "This sum to be expended on the dependent and criminal classes of the city is at the rate of about $2.50 for each inhabitant."‡ Even this large amount does not represent the cost to the city of the classes named, for it is estimated that the total annual expenditure in public and private charities is about $10,000,000,§ or $10 for each inhabitant.

The present value of State benevolent, penal and reformatory institutions of the State of Ohio is placed officially at more than $7,000,000, while the current expenses for the year 1879 were above $1,610,000.||

In our own State, the official report of expenditures for the year ending October 31, 1878, states the amount expended on the various

* See "Report of State Board of Health, Lunacy and Charity of Massachusetts." Boston, 1880.
† Appleton's Annual Cyclopedia for 1878. New York, 1879.
‡ *New York Medical Record*, April 10, 1880.
§ W. G. Wylie, M. D., "Civil Hospital Construction," Boylston Medical Prize Essay, 1876.
|| Annual Report of Board of State Charities for 1879.

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benevolent and correctional institutions to be $681,493, and this sum represents only a small part of the vast expense incurred because of the paupers and criminals of the State. The cost of our county poor-houses and jails, of our various courts, and the loss caused by the detection and detention of the thousands of persons annually arrested by our police and other officers of justice, must be added to swell the enormous aggregate of cost imposed on our healthy population by those who are physically, mentally, or morally diseased. If the present rate of deterioration continues, not many years will elapse before one-half of our people will be sweating and toiling for the other half in jails, penitentiaries, asylums and hospitals. Our people contribute freely to the support of the starving paupers of Ireland, but soon, unless the tide changes, with which we are drifting to physical and moral ruin, not only will every philanthropic impulse, but all the energies of industry, be required to support our own paupers and criminals.

Whenever an attempt is made to solve the problems that present themselves in an effort to find a remedy against the increase of the diseases under consideration, one fact must arrest the attention: this is the close relationship existing between insanity, pauperism, crime, and other diseases, depending on physical deterioration. In our poor-houses we find "the blind, the insane, the idiotic, the epileptic, the deformed, and the imbecile, as well as the pauper. They are not only inmates of the same building, but members of the same family, united by all the ties of consanguinity. This idiot is that pauper's nephew; this deaf-mute is his own child; that imbecile is his brother,"* another brother is in the penitentiary, while a sister is in a house of prostitution, and out in the pauper's field the earth rests on the remains of his uncle. If any one thinks this picture overdrawn let him read the studies of crime, pauperism, disease and heredity made by Mr. Dugdale,† who presents the history of a notorious family of criminals in the State of New York, and shows clearly how closely disease, pauperism and crime are related and how costly they are. The calculation being made that this single family in seventy-five years caused a loss of more than a million and a quarter of dollars, "without taking into account the entail-

*S. Royce, "Deterioration and Race Education." Boston, 1878.

†The Jukes: A Study in Crime, Pauperism, Disease and Heredity. R. L. Dugdale. New York, 1877.

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ment of pauperism and crime of the survivors in succeeding generations, and the incurable diseases, idiocy and insanity, growing out of this debauchery, and reaching further than we can calculate." Mr. Dugdale made a further report on the personal relations of 233 convicts; of these 54 belonged to families in which insanity, epilepsy and other disorders of the nervous system existed, while 83 per cent. belonged to a criminal, pauper or inebriated stock.

Dr. Guy says: "In England the ratio of insane to criminals is 34 times as great as the ratio of lunatics to the whole population."*

Dr. Tuke† reports that: on the 1st of January, 1877, the total number of insane patients in asylums, in England, was about 66,600; 59,000 of these were paupers.

Dr. Whitcombe, assistant medical officer at the Birmingham Burrough Asylum, publishes the fact that during the last twenty-five years 14 per cent. of the pauper patients admitted into that asylum had their malady induced by drink.

In 1864, the legislature of Massachusetts appointed a Committee on Insanity, who reported: "We find the pauper class furnishes, in the ratio of its numbers, 64 times as many insane patients as the other classes."‡

In the annual report of the State penitentiary, eastern district, Pennsylvania, for 1878, it is stated that of the 478 convicts received during the year, 9 were insane, 5 epileptics, 117 had a hereditary tendency to consumption, 24 to insanity, and 20 to epilepsy.

Out of 300 idiots, whose history Dr. Howe carefully investigated, 145 were the offspring of intemperate parents.

A visit to any idiot asylum will present the most striking evidence of the relation existing between idiocy and the scrofulous diathesis. This form of deteriorated constitution is found more frequently among the children of the poor than elsewhere; 50 to 60 per cent. of all the children admitted to orphan asylums show evidence of it.

It is needless, however, to multiply facts of this kind, for a study of the reports of every penitentiary, insane asylum and poor-house will show distinctly that paupers, criminals, the insane, the idiotic, the intemperate, and the victims of other forms of chronic disease, belong to the same class, the distinguishing feature of which is

*Dr. Wm. A. Guy, Journal of Statistical Society. Vol. xxxii.
†Modern Life and Insanity.
‡Report of Committee on Insanity. Boston, 1864.

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physical degeneration. When we recall the fact that all these diseases are transmissible from parent to child, it is easy to understand why they are increasing to such an alarming extent.

That consumption and scrofula are hereditary is universally admitted; therefore, no facts need be offered to prove it. That insanity is equally so is well established. The eminent authority, Morel, expresses the conviction that "the insane are of a deteriorated constitution, suffering from a long line of hereditary degeneracy." Maudsley, in speaking of the cause of insanity, says: "Hereditary predisposition is found in from one-half to three-fourths of the cases,"* and similar statements are made by all the authorities on the subject of insanity.

Intemperance is well known to be transmissible, and those who become victims of this disease through hereditary tendencies are seldom if ever cured, and they transmit to their children, not only a tendency to drink, but to crime and insanity also.

It is now well known that crime is generally not a simple affair of "an evil impulse or vicious passion" that might be resisted, but a result of antecedent causes, whose power the individual can not possibly resist. As Maudsley puts it: "There is nothing accidental, nothing supernatural in the impulse to do right, or in the impulse to do wrong; both come by inheritance or education; and science can no more rest content with the explanation which attributes one to the grace of heaven and the other to the malice of the devil, than it can rest content with the explanation of insanity as a possession by the devil."†

The late Chief Justice Gibson, said: "It is known that a proclivity to theft, intemperance, lying, cheating, and almost all other moral, vices is as transmissible as gout, consumption, deafness, blindness, and almost all other constitutional diseases."

Criminals, then, are not the result of accident. They are "by the hand of nature marked, quoted and signed to do a deed of shame." If men are born to be liars, cheats, thieves, and murderers, as they are to be consumptives and idiots—and any scientific investigation of the subject leads inevitably to this conclusion—moralists have been trying to solve the problem of the prevention

*Pathology of the Mind.
†Responsibility in Mental Diseases.

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of vice by a wrong method, and this doctrine of heredity explains why the moral teachings of all ages, the prayers of Christians for eighteen hundred years, temperance crusades, and all the other machinery put in motion for the reformation of the world, have so signally failed. The world must learn that most mental, moral and many physical diseases, are only to be prevented by seeing to it that men are born to an inheritance of a healthy, physical organization. Science tells us that many of these diseases can not be cured, and all the history of the world proves the statement true. But we are not left without a remedy: desirable qualities are transmitted as well as bad ones; every horse and cattle breeder knows this, and putting his knowledge into practice, brings his stock up to the highest standard of beauty and value; man is equally as susceptible of improvement as are these inferior animals, and by the very same processes. The Greeks knew this very well, and gave special attention to the propagation and improvement of men, and we still go back to them to find our highest type of human beauty and physical perfection. Are not men and women as valuable as horses and cattle?

The man who takes the greatest care to mate his horses or other animals properly, selects his wife from a family known to be affected with some hereditary disease, without reflecting on the consequences of his act. With his eyes open he takes a wife who will probably end her days in an asyulm, "and whose progeny can scarcely fail to share in her deplorable infirmity." Or, the healthy young woman chooses for her husband the man whose blood is tainted by consumption; neither asks:—

> "Can troubled or polluted springs
> A hallowed stream afford?"

Or, if they can transmit to their children sound lungs or common sense, and years later, when the consequences are apparent, instead of charging the results to their own folly, they cry out to the world for sympathy, and wonder at the dispensations of Providence. Very few measures are taken to bring about happy alliances, such as will result in offspring of high excellence, in a physical and moral point of view. Our social life and our civilization ignore questions of this kind, and the race deteriorates. Our philan-

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thropy even contributes largely to extend the evil of physical degeneration. "In the primitive phases of civilization those of weak and defective blood were more liable to be swept into an early grave than to-day; now all such are skillfully nursed up to the fertile period, to the multiplication and perpetuation of their kind. The profound study, the active sympathy and systematic charity bestowed upon the wrecks of our race for their cure and preservation, when compared with the prevailing indifference as to the means of preventing the steady increase of such unfortunates, is far from flattering to our foresight in economy and beneficent work." Vast infirmaries, hospitals and asylums are built and sustained at enormous expense to shelter and keep alive the constantly increasing number of those hopelessly bankrupt in vital condition, and thus aiding in their increase and perpetuation. The problem of how to exercise our benevolent instincts without helping to bring about so deplorable a result is an important one.

I have already stated—and the fact is well established—that acquired conditions are hereditary, and because of this our form of civilization and our social habits are doing much to develop new lines of race deterioration. But time will not permit me to direct your attention to more than one single matter in this connection, and that relates to defects in our system of education that entail serious disease on many children. We have in Indiana over 13,000 teachers, and more than 700,000 school children. It is apparent, therefore, that all questions in relation to the influence of school-life on the health of children are of importance.

A faulty construction of seats and desks causes many cases of spinal curvature, with distortion of the chest, that favors the development of consumption; the air of school-rooms is usually bad, and it is an established fact that bad air tends to develop this fatal disease. Professor Richardson says: "The large proportion of the consumptive population have been brought up in close school-rooms during school hours far too prolonged." Dr. Bowditch, of Boston, tells us it is very common for the consulting physician to see a child who has been, at school, much interested in his studies, and constantly stimulated by his teachers and parents, without regard to his physical health, to study that he might stand high in his classes, having his emulation excited by prizes, who has been

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crushed by the pressure thus brought to bear upon him. "The prize gained, or the examination concluded, being the signal for entire decay of the physical powers," and the development of consumption.

Dr. Clark has clearly pointed out* how females are liable to suffer in health from attendance on school, and that the methods pursued in our schools are largely responsible for the neuralgia, hysteria, and other nervous derangements, that do so much to produce the chronic invalidism of many American women. The force, which should have been used up in the production of "blood, muscle and nerve, being expended in the brain work of the school-room," there is produced a woman, beautiful but fragile, illy fitted to transmit healthy life to her children. During the school life of the girl there is often laid a foundation of disease, important to her as an individual, because of the mental and physical pain resulting, but of very much more consequence because of its effect on her children.

Another evil of great magnitude, for which our system of education is mainly responsible, is injury to eye-sight. An examination of many thousands of school children has shown that most of the defects of sight originate in school life, that a large percentage of scholars is affected, the percentage increasing with the stage of advancement in study, and that these defects "are progressive in degree, according to the length of school experience."‡ Defects of sight are hereditary, and as a consequence, all scholarly races show a large number of persons with defective vision.

Very serious tendencies to disease of the nervous system are developed in the school-room. "Temporary active hyperemia is the condition of brain action," and it is easy to understand how the young brain, subjected to severe and long continued mental strain, may be vitally injured. Our present system is practically a "machine system of education." The individual peculiarities of the child are lost sight of in the effort to make everything conform to rule and system, that are as inflexible as the bed of Procrustes; the bright child must be cut down, and the dull one stretched up. In both cases the excitement of the brain following study is increased by the emotions excited: in one case there is crushed hope, in the

*Sex in Education.

†Effects of Study on Eye-sight. Ward McLean, *Popular Science Monthly*, November, 1877.

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other gratified vanity; the brain is unduly stimulated, and the rest of the body suffers. It is a law among living things that rapid growth and development are followed by early decline and death, and the brain of a child offers no exception to the rule. Cerebral stimulation tends to produce insanity. Dr. Ray recognizes that "hard study at school lays the foundation of many attacks of insanity later in life," and similar statements are made by many other observers. That the influence of the excitement of school life in the causation of insanity is not generally recognized, is because the evil does not come at once. The children grow up with excitable, nervous systems, that often can not bear the fret and strain that come in active life, and insanity—a state worse than death—follows. Even when they do not pass the invisible line separating sanity from insanity, they are irritable, feeble-minded, and of little use in the world. These bad qualities they transmit to their children, and thus the evil is perpetuated and extended.

A system of education producing such fruit surely offers many serious questions to the physician who is interested in the prevention of disease, the perpetuation and the advancement of the race.

The logical sequence of the broad statements I have made would reduce the questions in relation to heredity to a very simple formula, (when it is a very complex one). My design has been to direct attention to the general law of heredity, by which similar qualities are transmitted from parent to child. It would show an incorrect conception of the law of heredity to look for a return of identical phenomena in each new generation. It does not follow that the children of an insane or criminal father must of necessity be lunatics or criminals; the very diseases of the parent, with the same symptoms, are not always transmitted, only the organic dispositions, and these do not always show themselves, in direct succession; that is to say, the child born of defective parents may present no evidence of physical, mental or moral disease, and conversely the offspring of parents, apparently physically perfect, may be born with the most serious defects. The environment greatly modifies transmitted qualities, either good or bad. The individual having a hereditary tendency to tuberculosus may, by right management, be prevented from dying of consumption, and the child who inherits a vicious disposition may, by careful education and moral training,

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be prevented from developing into a criminal, and further, the tendency to transmit these original defects may be to a great extent, if not entirely, lost.

There being a reciprocal relation between heritage and environment, it follows that to attain the highest state of physical, mental, or moral perfection, men must not only be born right, but afterward subjected to right influences, neither alone being sufficient.

In conclusion, gentlemen, now that my task is done, I regret that I have been unable to present these questions in the forcible and impressive manner demanded by their importance. They are worthy of the most profound consideration, and of the grandest eloquence. Every day the demand for their solution becomes more urgent, for everywhere about us the wrecks of humanity are stranded, and all along the stream of life thousands are drifting to a like fate. Every wind is freighted with appeals for help. We can not listen to them unmoved. We *must* go to their aid, bearing a salvation for the bodies of men. Our prayers will not stay the Nemesis that brings retribution to those who violate the laws of life. Work, persevering, intelligent work, only can, and this must be performed by the physician, and in it can surely be gratified the highest ambition. The world honors Phidias who, in sculpture, and Raphael who, in painting, present us with rare examples of human beauty. Their masterpieces, however, are but carved stone and colored canvas. How much more then should it honor the physician, whose art is to save and develop men, women, and children, that they may exhibit in their own living bodies all the perfection of a divine humanity.

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THE ICTERIC FORM OF PERNICIOUS FEVER.

WILLIAM R. M'MAHAN, M. D., HUNTINGBURGH, IND.

Among the various diseases that physicians are called to treat in the routine of their professional lives, there are none in which acuteness of observation, correctness of judgment and promptness of action are demanded more than in the various forms of pernicious fever. The observations of the medical profession have established the fact that it is akin in origin to the common malarial fevers that infest the major part of the earth. It is evident, then, that we will find it, as a general rule, in proportion to the intensity of malarial miasma in any given locality. As this disease is sudden in its onset, rapid in its action and deadly in its effects, it is absolutely necessary to success and the discharge of duty that we, as physicians, should have clear and concise conceptions in regard to each and every form that the disease is known to assume—*e. g.*, the comatose, choleraic and algid. These are the usual forms in this section of the country. But there are other forms equally, if not more, malignant, but less common, and, as a result, the gravity of the disease may not be fully realized until the opportune moment, which is early in the disease, has passed. Among these we find the *icteric* form of pernicious fever, and to this I wish to direct attention. First, on account of the icteric mask under which it moves. Second, on account of the great mortality that attends it, and third, the scarcity of medical literature on this subject. This form of pernicious fever is confined principally to the intensely malarial regions

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of the torrid zone. It sits, vulture-like, as an "endemic over the islands of Nosse Be and Madagascar." But it is occasionally seen in this section of country, and to be once seen forcibly implies to be always remembered. In the cases that I have observed the disease developed from a neglected intermittent of several days' duration in persons who were suffering from malarial troubles of not less than five years' duration. Within the last three years I have treated three cases of this form of the disease, and will attempt a description of them, even at the risk of prolixity.

The first case came under my observation and professional treatment on the 27th day of December, 1877, in the person of Samuel Rutipeoler, of Huntingburg, Indiana. He was twenty-five years old, of German parentage, and by occupation a day laborer. He had a large, bony frame, and was, when well, a man of more than ordinary endurance. For seven years preceding this attack he had suffered, at short intervals, from attacks of intermittent or remittent fever, and when *he deemed it advisable* was in the habit of taking an antiperiodic of some form. On my first visit, which was on the morning of the 27th, I got the following history from him and his wife: That he had had an attack of intermittent fever, of the every other day form, for about one week, but that the chills and fever were no harder than they had usually been, until the day previous. On that day he had a long and very severe chill, and in the early part of the chill "his eyes and skin became yellow, and his urine was nothing but blood." The sclerotic and integument were now intensely yellow, and he was extremely restless. His pulse was 110 per minute; temperature 104° in axilla; skin dry and crusty. He complained of headache, of a constant, severe pain in the region of his stomach and liver, and of an aching sensation throughout his entire body. He was yawning about once every minute, and vomited, at short intervals, a dark, thick, and viscid bile. His bowels had not moved for several days; tongue slightly pointed, dry, and covered with a light brown coating; rational, but rather listless. He voided urine which resembled in appearance the flow as of venous blood through a large orifice, from the median basilic vein in a low state of distension. He was almost constantly changing his position, and every few moments would take a deep inspira-

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tion. His facial expression was that of one suffering great pain, coupled with anxiety.

TREATMENT—I gave him, calomel, grams .78, and ordered sulphate of quinia, grams .65, every two hours. Also, tinct. of digitalis, grams .35, ever four hours; a large sinapism to be applied over the region of the stomach, and cold applications to his head.

Morning of the 28th—Worse; has had no remission or chill since last visit. Pulse, 115; temperature, 106°; skin dry and crusty, tongue dry, and with a thick, light brown coating. He has been delirious during the night, and is so still to a slight extent. Vomiting still continues; has voided with difficulty in the last twenty-four hours one liter and one deciliter of urine, blood-like in appearance. The calomel had moved his bowels, and his hearing was heavy from the effects of the quinia. Ordered the quinia continued; the tinct. of digitalis to be continued, grams .19, every four hours, and that he should be given 8 grams of brandy, and 1.29 grams of aromatic spts. of ammonia every two hours.

Morning of the 29th—Some better; pulse, 108; temperature, 101°; not so restless; yellowness of skin not so deep; color of urine about the same; has taken and retained some nourishment; profoundly cinchonized. Ordered the quinia continued, dose, grams .42; brandy and ammonia as before.

Morning of the 30th—Much better. Pulse and temperature nearly normal; yellowness of the skin is rapidly fading; color of urine not so deep; bowels open, and the vomiting has ceased. From this time his improvement was slow but continuous, and within a few weeks he was seemingly well.

The second case occurred in the person of Isaac Coto. He was a farmer by occupation, aged 57, and was an old and honored citizen of this county, and had lived for the last thirty-five years three miles east of Huntingburgh. He had suffered, at short intervals, for the last five years from malarial fever. On Sunday evening, the 26th of January, 1879, his son called on me for medicine for his father. He stated that his father had had a chill on Wednesday, Friday, and that morning; that the first two chills were light, but that the one he had that morning was unusually severe, and that he was passing bloody-looking water. I gave him a cathartic and ten powders of the sulphate of cinchonidia, each containing grams

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.78, one to be given every two hours. On the morning of the 27th, his son reported that his father was much better. At 10 A. M. I was called to visit him, and found him in the following described condition: Pulse, 105 and very weak; temperature, 103°; extremely restless; skin dry and crusty; complained of pain throughout the entire epigastric region, head and back. The icteric hue was now very distinct over his entire cutaneous surface. Here and there could be seen over his face, arms and chest spots of purpura hemorrhagica. He was yawning every few moments, and vomited at short intervals a large quantity of dark, viscid bile. He had voided within the last twelve hours about half a liter of urine that could not, by ocular inspection, be distinguished from blood. I ordered a saline cathartic, as his kidneys were acting rather sluggishly, .65 gram doses of quinia every two hours until he was profoundly cinchonized, and .39 grams of the tinct. of digitalis every four hours; cold to be applied to his head, and a large sinapism over the epigastric region.

Morning of the 28th: His condition was much the same. He had voided six deciliters of urine in the last twenty hours, still blood-like in appearance; bowels had not moved; cinchonized. I gave him calomel, grams .65, continued the quinia in smaller doses, and ordered alcoholic stimulants, ammonia, and animal broths.

Morning of the 29th: Much worse; pulse 120; temperature 104°; surface of a dark yellow color; hemorrhagic spots larger; restless; voided three-fourths of a liter of urine within the last twenty-four hours; calomel has acted well; vomiting still continues. Continued quinia, and ordered a decoction of buchu leaves and digitalis to be prepared and grams 16. to be given every two hours. Continued the brandy and ammonia in increased quantities, and ordered a milk and animal broth diet to be given immediately after vomiting. Evening (same day) his condition was about the same; continued treatment.

Morning of the 30th: Better; pulse 100; vomiting continues, but at longer intervals; passed, during, the night four deciliters of urine, not so deep in color; has taken and retained some nourishment; continued treatment. Messenger reported in the evening that he was still improving, and that he had voided urine during the day almost natural in appearance.

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At 1 A. M. next morning I was summoned in great haste to see him. The messenger stated that he had "caught cold during the night, and was coughing himself to death." On my arrival I found him coughing with each expiration (due, no doubt, to the irritation of the uric acid on the nerve centers), and the yellowness of surface greater than on the previous day. His pulse was now 120, and extremely weak. On close inquiry I found that he had passed but a few ounces of urine since my last visit, eighteen hours previous. I introduced a catheter and drew off four grams of clear, limpid urine. I requested consultation, and sent by the messenger for elaterium. Dr. G. P. Williams arrived at 4 A. M. It was now painfully evident that we had a case of uremic poisoning to contend with. We ordered elaterium, grams .065 every two hours, fluid extract of jaborandi, grams .65 every two hours, and Holland gin to be given him as often and in as large a quantity as he could be induced to take. We did not deem it advisable to administer a warm bath, on account of his extreme cardiac debility, and as a substitute, to induce diaphoresis, we took ears of corn out of hot water, wrapped them in cloths and placed them around his body, but with a negative result. Dr. Williams, in my absence, visited him at noon, and found that the elaterium had not acted on his bowels, that diaphoresis had not been produced, and that his kidneys had not secreted any urine. He was evidently sinking. The doctor increased the elaterium, and continued the stimulants, milk and animal broths. I visited him at 5 P. M. He was now in a semi-comatose condition; extremities paralyzed; no odor about his person nor in his breath of uric acid. He died at 9 P. M., six days after the date of attack.

The third case occurred in the person of Mr. Samuel Rutipeoler, the person first mentioned in this paper. I visited him, accompanied by my student, Mr. James Beardsly, on Sunday morning, the 26th of October, 1879. He stated that since his last attack, which has been described before, he had had frequent attacks of fever; that he had been having a chill every other day for a week, but that they had been no severer than usual until the previous day, when, while gathering corn, he took a chill which lasted four or five hours, and was very severe, and that during the chill his skin became yellow; and during the night he passed bloody urine and

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vomited up a large quantity of thick, offensive bile. He was now yellow and very restless; pulse 105, and very weak; temperature 103°; skin dry, and of a parchment-like feel; vomits at short intervals a dark green bile, yawning every few minutes, and complains of a deep-seated pain, which is increased on pressure in the region of liver and stomach. His tongue is covered thickly with a whitish yellow coating; bowels constipated; headache; rational but rather listless. His restlessness is suggestive of one suffering from acute anemia, caused by the loss of blood. He has voided within the last twelve hours half a liter of urine, blood-like in appearance.

TREATMENT.—I gave him calomel, grams .78, and ordered him to be given quinia, grams .78, every hour until five doses were taken, and then sulphate of cinchonidia, grams .78, every two hours; also, to use it endermically, incorporated with lard, over chest, arms, etc.; counter-irritation over epigastric region, and cold application to his head; milk and animal broths to be given after each act of vomiting.

Morning of the 27th, worse; had a light chill during the night; pulse, 115; temperature, 103½°; tongue dry and heavily coated; bowels moved at some time in the night; vomiting still continues; extremely restless; and has voided three-fourths of a liter of urine in the last twenty-four hours; color of urine still blood-like. The icteric hue of his surface is now a dark yellow; is delirious, eyes sunken, and have a cadaverous appearance. He seems to be profoundly cinchonized. Continued the quinia, discontinued the digitalis, and ordered brandy and ammonia alternately every hour, and his entire body to be sponged every four hours with tepid water rendered slightly alkaline by the addition of the bicarbonate of soda. Evening of same day messenger reported him much better. Continued treatment, antiperiodic to be reduced to grams .32. He remained in about the same condition until 11 P. M., at which time he vomited an unusual amount of dark, offensive bile, dropped into a comatose condition, and died at three in the morning. Duration of disease, sixty hours. The urine in the first and third cases was examined. Specific gravity 1025; containing both albumen and bile pigment. A microscopical examination revealed here and there a blood disk imbedded in amorphous matter. Upon evapo-

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rating and examining a specimen, crystals of hematine were found. This closes the description of three cases occurring in two persons, and proving fatal in both.

In each of these cases we find that chronic malarial trouble preceded each attack; in the first case seven years, in the second five, and in the third nine. These cases occurred in the fall and winter months, and at a time when we were having, comparatively, a small number of malarial cases in this vicinity. Prof. Hertz, in Ziemssen's Cyclopædia, says, in speaking of this disease, that "the actual attack always begins with a violent, long-continued chill, during which the icteric color either first begins, or if already present, grows more intense, spreads over the entire body, and soon assumes a saffron or olive hue. Intense nausea is now felt, with copious vomiting of bile, and often bilious diarrhea. Thirst is urgent, the tongue is coated white and yellow, and the patient suffers with excruciating headache, pain in the spleen and over the liver, and a feeling of numbness in the limbs. The pulse is small, frequent and hard. The urine is of a deep red color, resembling porter or Malaga wine, though free from blood, and owing its color to the abundant presence of biliary coloring matter. It is quite scanty, and the effort to void it causes distressing tenesmus. During the hot stage the pulse grows fuller and more frequent, the respirations anxious and noisy, the skin hot, and the thirst more tormenting. Vomiting still continues, and the urine grows still more scanty. During this stage, which lasts from three to five hours, death often occurs; otherwise the disease passes on to the third stage, or that of sweating. The skin is now bathed in a profuse perspiration, which, like the urine, stains the linen yellow, and the symptoms gradually improve, unless the disease assumes the remittent or continuous type (as in my cases); then, in that case, all the symptoms become aggravated, vomiting continues without interruption, coma gradually supervenes, and death is the result."

In the January number for the year 1870, *American Journal of the Medical Sciences*, there is a bibliographical notice of the transactions of the Alabama State Medical Society, in which is mentioned a paper by Dr. R. F. Mitchel, on 'Hemorrhagic Malarial Fever.' The Dr. claims that this disease is peculiar to the Gulf States, and that it has become quite common since the late war; that it is char-

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acterized by intense nausea and vomiting, a very rapid and complete jaundiced condition of the surface, as well as of most of the internal organs; an impacted gall bladder, and hemorrhage from the kidneys.

In the January number, same journal, 1877, there is a short notice of a paper read before the State Medical Society of Alabama by Dr. R. D. Webb, on "Malarial Hematuria." He states that, "whatever may be the fact in Europe, the malarial fever, with hemorrhagic tendencies, observed in the Southwestern States, is the same disease, whether the effusion takes place in the kidneys, stomach, bowels, gums, nose, womb, blistered surfaces, or in the substance of the tissues."

The writer does not, however, mean to deny that hematuria is the most constant and characteristic symptom of the malady. "Yellowness of the skin and nausea are symptoms uniformly present." "Suppression of urine sometimes occurs." The descriptions of the icteric form of pernicious fever, as given by Prof. Hertz; that of malarial hemorrhagic fever, as given by Dr. Mitchel; that of malarial hematuria, as given by Dr. Webb; and that of my cases, differ chiefly in the agent that imparted the blood-like color to the urine. These differences seem to me to depend on incidental causes—*e. g.*, the condition of heart and kidneys, blood pressure, and difference in intensity of the disease, and not on the difference in type. In the cases that I have observed I believe that the rapid and intense jaundiced condition of the surface was due jointly to hematine and biliary coloring matter in the blood, and that the hematine was derived from the rapid necrosis of blood disks under the action of malarial poison. This was evidenced by the symptoms of acute anemia (such as restlessness and frequent deep inspirations), the rapidity with which the cutaneous surface was rendered intensely yellow, and the presence of biliary coloring matter and hematine in the urine. May it not be possible for malarial miasm to be latent and locked up in the gradual pigmentation of organs and tissues (that so frequently occurs in cases of chronic malarial troubles), and then to be liberated by some occult cause, and added to the free malarial poison in the circulatory

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system, thus giving us, in some chronic cases, the type and intensity that characterize acute case in the jungles of Africa.

These cases urge upon us the necessity of more active treatment in our chronic malarial cases, as well as of disabusing the public mind of the prevalent idea that, in order to get rid of malarial fevers, they must be worn out. If I should be called upon to treat other cases of this disease, I would, at the earliest possible moment, produce profound cinchonism by the hypodermic administration of quinia. The almost constant vomiting in these cases, together with the viscid contents of the stomach, necessarily renders the absorbtion of all remedies extremely slow, and the disease moves on beyond a point that can be reached by remedial agents before we have the full therapeutical effect of the quinia, and death is the result.

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KAKONEMIA, OR PERNICIOUS ANEMIA.

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I wish to call attention to a class of diseases which, I think, are often unrecognized or misunderstood by practitioners. Anemia is common enough, and certainly has long been recognized. This condition is generally caused by loss of blood or by mal-nutrition or lack of food. But there is a diseased condition which has been commonly called pernicious anemia, leukemia (white blood), or leucocythemia (white blood cells), and sometimes splenic leukemia, on the supposition that the spleen is generally diseased, which does not appear to be due to these causes. Virchow recognized two varieties, which he termed splenic and lymphatic leukemia. This variety of pernicious anemia seems to have been most prevalent among women, and to occur most generally during pregnancy, continuing and proving fatal after parturition. Gusserow in Germany published an account of five cases, in 1871, all occurring during pregnancy, and all proving fatal. And in 1872, Biermer, of Zurich, published a memoir of fifteen fatal cases, most of which occurred in women, and were connected with child-bearing.

Prof. Da Costa published a number of cases in 1875;[1] and Dr. Mursick, of Nyack, N. Y., published the report of a case, and a summary of sixteen cases the same year.[2] In this disease there seems to be, always, an increase of the white blood corpuscles and a decrease of the red corpuscles, and often a decrease in the volume

(1) American Journal Med. Sciences, Vol. LXIX. page 117.
(2) American Journal Med. Sciences, Vol. LXIX. page 449.

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of the blood. The spleen was enlarged in nearly all cases, and some of the lymphatic glands in a large number of them; and other lesions were common, but not constant. Another similar disease, or probably a variety of the same disease, has been described by a number of observers. In this the volume of the blood may not be much diminished, and there may not be any increase in the number of white corpuscles; but the number of red corpuscles is generally, if not always, diminished; and the blood seems of a dirty, brownish red color; and in a number of cases changes have been found in the marrow of the bones. This disease was described by Dr. Hodgkin as early as 1832, and more fully by Addison, in 1855. M. Lépine, of Paris, read a memoir in 1876, reviewing the various reports of this disease by authors prior to that time.[1]

Dr. Addison, of London, published in 1855, the first account of a disease attended with bronzing of the skin, which is known as Addison's disease. This disease was attributed by Addison to disease of the supra renal capsules, because he found those organs affected in all cases which he examined. This seems to bear strong relationship to Hodgkin's disease, or progressive pernicious anemia, and probably is a variety of the same disease. Dr. William Pepper, of Philadelphia, published in 1875,[2] also in 1877,[3] a number of cases of those diseases, and attempted to prove, and seemingly does prove, that they are all of the same nature; and if not the same, are at least closely related. Dr. Pepper attributes this class of diseases to failure or derangement of the blood-making organs, to wit, the spleen, lymphatic glands and the medulla of the bones; and proposes the name *Anœmatosis* (α, privative and αιματοσις formation of blood). He thought the essential nature of the disease to be failure of the proper organs to perfect the red corpuscles of the blood. It seems to me more probable that it is a disease of the blood, affecting and destroying the red corpuscles; and that the leucocytes are diseased or dead corpuscles. In accordance with this view, the term kakonemia is proposed (κακον, bad or diseased, and αιμα, blood), as being more correct. The force by which all actions in the system, vital as well as muscular, are performed is

(1) Abstract of Med. Science, Vol. IV. page 436. From London Medical Record, for Sept. 1876.
(2) American Journal Medical Sciences, Vol. LXX. page 313.
(3) American Journal Medical Sciences, Vol. LXXIII. page 75.

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derived from the food; the nutriment entering the blood, and being there prepared for the fulfillment of its office. I believe it is not known exactly how and where the blood corpuscles are formed, but I hold the opinion that they are formed in and from the blood, and that none of the solid organs are blood-making organs. If so, the cause for the non-perfecting of the corpuscles exists in the blood and not in the solids, the de-vitalized blood not being able to impart vitality to that which is forming. The health and power of all the solids depend upon the purity and richness of the blood. They only lack nourishment if the blood is not rich; but are positively damaged if the blood is toxic or diseased. If the fault were only the failure to perfect the corpuscles, and a consequent sparseness of them, we would have only simple anemia and debility. When we have more than this, progressing steadily to dissolution, there must be an impure or poisonous condition, as well as one of poverty. The suppositions that leucocythemia has its seat in the spleen, progressive pernicious anemia in the medulla of the bones, and Addison's disease in the supra renal capsules, although believed by some, seem not to be proven; cases having been found in which these lesions were absent. Investigators having failed to find any lesion of the solids, which is constant, in any variety of the disease, it seems probable that the proximate cause is in the blood itself, and, for reasons already given, that it is of a malignant character.

The symptoms of this class of diseases are various, very few, if any, being pathognomonic. Simple anemia is common, and generally yields to treatment. It is often impossible, at first sight, to distinguish the pernicious variety. Probably the most characteristic feature is its persistence under ordinary or even extraordinary treatment. It generally occurs, or at least becomes serious, during pregnancy; but some cases of chlorosis and some cases of anemia in men, exhibit the same rebellious pertinacity, partial amendment occurring, almost invariably, and relapses to a worse condition occurring just as often. Extreme pallor, the almost entire absence of red in the complexion, is a characteristic feature; but if in this it differs from common anemia, it is only in degree. The spleen is generally, and some of the lymphatic glands frequently, enlarged; but these are also common in other cases. Hodgkin's disease, or progressive pernicious anemia, is thus described by Addison:

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"It makes its approach in so slow and insidious a manner that the patient can hardly fix a date to his earliest feelings of that languor which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted; the pulse, perhaps large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement; there is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth and waxy appearance; the lips, gums and tongue seem bloodless; the flabbiness of the solids increases; the appetite fails; extreme languor and faintness supervene, breathlessness and palpitation being produced by the most trifling exertion or emotion; some slight edema is probably perceived about the ankles; the debility becomes extreme. The patient can no longer rise from his bed, the mind occasionally wanders; he falls into a prostrate and half torpid state, and at length expires. Nevertheless, to the very last, and after a sickness of perhaps several months' duration, the bulkiness of the general frame and the obesity often present a most striking contrast to the failure and exhaustion observable in every other respect."

This description has probably never been improved, though the extreme pallor described is not present in all cases; and several of the symptoms given are common to the different varieties of the disease. Other observers have noted that in Hodgkin's disease the flesh is retained remarkably well, and, sometimes, the color; and that the patient is apt to be accused of being lazy instead of being sick. Addison also remarks that this disease had uniformly occurred in fat people; and that fatty degeneration is generally if not always present.

In some cases, presenting in the main, the same symptoms, there is a peculiar bronzed appearance of the skin. At first yellow, resembling jaundice, but becoming darker; finally assuming something like a mahogany hue. The color seems to be due to an abnormal formation of pigment. This, known as Addison's disease, is, on account of the bronzed skin, in connection with the general symptoms, generally readily recognized.

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The treatment of this class of diseases is unsettled, and the results have generally been unsatisfactory. Addison says: "With perhaps a single exception the disease, in my own experience, resisted all remedial efforts, and sooner or later terminated fatally." Few, if any, have since had any better success.

It seems reasonable to suppose, and has been supposed, that tonics, and especially the preparations of iron, ought to be useful; but they have generally failed to cure. Prof. Da Costa thought that he cured one case of leukemia with hypodermic injections of ergotine; but in other cases it failed. Drs. Broadbent and Wilson Fox claimed very good results from the use of phosphorus; but others, since, have not been so fortunate. Dr. Chvostek, of Germany, reported 91 cases treated by Erhlich, 16 treated by Mosler, and 4 treated by himself, and remarks, that "quinia, iron, injection of the enlarged glands with arsenic, and treatment by galvanism and electricity, have proved as useless in Germany as the same methods of treatment, with phosphorus, iodide of potassium, and many other drugs, have in the hands of English physicians."

Dr. Pepper says: "The disease, when once fully established, appears to be invariably fatal. The remedies which afford most prospect of relief are cod liver oil, arsenic, and phosphorus." He also speaks favorably of iron, iodide of iron, and nitrate of silver but says they afford only temporary relief.

Prof. H. Lebert, besides the usual tonic remedies—quinia, arsenic, iron—also recommends change of air, cheerful company, good moral influence, good food, and in some cases good wine; and in young subjects bathing and bromide of potash. He thinks moral treatment, in many cases, more appropriate than efforts to restore iron to the blood. It seems natural to suppose that transfusion of healthy blood ought to be beneficial, but Dr. Pepper says it has been tried with but slight and temporary effect.

In accordance with the view taken as to the nature of this class of diseases it would seem that there are three indications to be met:

1. To support the strength and tone of the system, especially the digestive and nutritive functions and the nervous system.

2. To arrest the destructive changes going on in the blood by neutralizing the poison which produces them.

3. To eliminate the noxious and effete materials from the blood.

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The first indication is the one that physicians have generally aimed to meet, and probably the remedies recommended and employed are as appropriate as could be found. I would propose, in addition, nux vomica or strychnia and digitalis. The proper method of meeting the second indication has not yet been learned; and, so far as I know, not attempted. As internal remedies, to be taken up by the absorbents, into the circulation, I would think that some form or combination of salicylic acid, and of chlorine, persistently used, might be beneficial. It seems to me, however, as a matter of theory, not having tried it, that intravenous injection would be the most direct and most hopeful method. For this purpose I would propose boracic acid, properly diluted. To meet the third indication a judicious use of diuretics and cathartics would be appropriate.

Here is a short summary of a few cases supposed to have belonged to this class of diseases:

1. Mrs. N. was seen with Dr. P., who was in charge of the case. Labor had occurred one or two weeks previously. She was a rather large, fleshy woman, aged about thirty years; face full, but not swollen; no emaciation; abdomen tympanitic and a little tender; not much pain, but she was vomiting, or, rather regurgitating, everything swallowed. But the most prominent symptom was extreme pallor. Her face, and even the prolabia and tongue, seemed perfectly bloodless—as white almost as the sheet on which she rested. Diagnosis, leukemia; prognosis, unfavorable, although she did not seem greatly prostrated; could turn or raise herself in bed, and did not complain much. She lived but four or five days; no post mortem.

2. Mrs. M. M., after accouchment remained pale and debilitated. Two good physicians in attendance could not find any local disease, and satisfied themselves that she ought to recover; but she nevertheless died promptly. Post mortem examination did not show any lesion, except a circumscribed swelling on the convex surface of the liver; a number of large gall stones in the gall bladder which did not seem to be then causing trouble; and a great scarcity—almost total absence of blood in the system—none being found except in the large vessels, and they not distended. No microscopic examination.

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3. Mrs. R., after accouchment, remained debilitated and gradually grew worse. Some three or four weeks after confinement the symptoms assumed a most threatening character. Two physicians in attendance pronounced the disease leukemia. The treatment seemed of no avail. When the patient seemed at the point of dissolution, death being almost hourly expected, the physician in charge, at the suggestion of the writer, prescribed an etheral solution of phosphorus, and then abandoned all treatment as useless. She continued, however, to live, and in a few days began slowly but perceptibly to improve, and finally recovered. The physician in charge said that he did not know that any treatment given was of any benefit, but if any was, it was the phosphorus.

4. Mrs. N. R. was treated last summer by the writer for what was supposed to be chronic malarial disease, with debility. She was a widow; had had no children; was near eighty years of age; large and robust, masculine in appearance, and had been very fat for many years; not very pale; pulse generally feeble; occasional fever, not regular nor very high, with poor appetite; occasional attacks of colic and of nausea, and of diarrhea alternated with costiveness. But what she complained of principally and constantly was debility—great muscular weakness. She had an attack of pain, and then swelling of one leg and thigh, resembling phlegmasia dolens; and as that got better the other side was attacked, but with less swelling. She would improve for a few days and then relapse. I came gradually to the conclusion that I had a case of progressive pernicious anemia. About the time that I came to this conclusion she had a sudden attack of extreme prostration and muscular debility—not paralyzed, but totally helpless and semi-comatose. A nearer physician was called, and the case passed out of my hands. The new attendant diagnosed softening of the brain, and treated without securing any amendment for a week or two; after which she slowly improved for a few weeks, and was able to sit up a little, when suddenly prostration came on, and she died in a few hours. On post mortem examination the brain was found to be flabby and anemic, but with no decided softening. The arachnoid and pia mater seemed to adhere together, and were of a pale rose color; crura cerebri possibly a little softened. Pons varolii and cerebellum a little vascular. Lungs engorged with blood; the lower por-

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tion of the right lung seeming collapsed, and the right pleural cavity was filled with serum. Heart large, flabby, and covered with fat. Liver engorged with blood, and probably a little enlarged. Spleen normal. The other viscera seemed normal. Blood not lacking in quantity, but seeming brownish in color. Microscopic examination not very satisfactory, owing partly to the inexperience of the examiner and partly to the prevalence of dark, cloudy weather until the specimens had dried. The blood contained a great number of oil globules, but no corpuscles could be detected until the return of sunshine, when they could be seen, seemingly few in number, large and irregular in form, and very dim in outline. There was a large number of round white bodies, a little larger than blood corpuscles. I could not determine whether they were large leucocytes or small oil globules. These seemed nearly as numerous as the red corpuscles. I think a person, not knowing where the blood came from, could not have recognized it as human blood.

5. Last summer Mrs. T., of Wintersett, Iowa, visiting in Indiana, came to the writer for treatment. She had had some uterine disease, attended with leucorrhea, for which she had been treated, and had improved. But the main trouble, and that for which she desired treatment, was a feeling of extreme weakness and debility, being unable to make the least muscular exertion without fatigue and a feeling of prostration. She is small in stature, thirty or thirty-five years of age, is living with her second husband, but has had no child and no miscarriage that I am aware of. The debility had continued about two years, and had gradually increased. She was rather pale and thin, but not emaciated. Heart feeble; pulse rather frequent and weak; appetite variable, generally poor; bowels irregular, often constipated; no jaundice. She had been treated by a number of physicians, but without benefit, and she said no two had agreed as to the nature of her disease. Diagnosis, progressive pernicious anemia. Prognosis, grave as to cure, but no immediate danger. Prescription: pill containing a half milligram of phosphorus, and sixteen milligrams of ext. nux. vomica, three per day. Also, tr. digitalis, tr. mur. iron, and tr. belladonna, three times per day; and for a short time at first, subnit. bismuth and lactopeptin, to improve digestion. Under this treatment she

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improved steadily, and in a month or two quit taking it, because she thought she did not need it, and returned home, telling me she considered herself well, except a slight leucorrhea, which remained about in statu quo, and for which I had not treated her. If the diagnosis was correct, this was an unusually good result.

6. Mr. J. H., some thirty-five or forty years of age, had all the symptoms of Addison's disease, including a deeply bronzed skin. He was treated by different physicians without any permanent benefit, the disease gradually increasing in severity, and proving fatal in about four years. On post mortem examination, the fat in all parts of the body was found to be of a deep yellow color; the muscles thin—atrophied; the heart seemed quite soft in texture, and contained in each ventricle a firm white clot, nearly filling the cavity. The suprarenal capsules seemed atrophied and somewhat changed in texture. No microscopic examination.

7. Mr. D. S., aged about forty, had been in bad health about four years. The skin, at first quite yellow, becoming darker, until it assumed a deep bronze hue. The disease was supposed to be chronic malarial trouble, jaundice and general debility. He was treated by a number of physicians, in different neighborhoods, but without any permanent benefit. He came, finally, under the care of the writer. Diagnosis, Addison's disease; prognosis, grave. He improved for a time; then sudden prostration occurred, so great that he could not speak aloud or scarcely move a hand. Then there was gradual improvement until he could walk around a little, when he went to a medicinal spring in Michigan, where he died suddenly from prostration. No post mortem examination.

I am aware that these reports are not full enough in detail to be of much advantage, but they may be of some interest in regard to diagnosis, several of them having been mistaken, as the writer thinks, for other diseases; and in regard to treatment, only two having been benefited—one by phosphorous, if at all, and the other by phosphorus, nux vomica, digitalis, iron and belladonna.

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CASE OF ANOMALOUS GROWTH ON THE BRAIN.

I. C. WALKER, M. D., INDIANAPOLIS, IND.

On the 19th day of March, 1880, I visited Mr. B. with the attending physicians, Drs. Woodburn and Newcomer, to the courtesy of whom I am indebted for the following history, to wit: Aged 59, was attacked February 23d., 1880, with vomiting, was also suffering from slight pain in forehead, sleeplessness, some mental aberation; if energetically interrogated as to his condition, would give rational answers; when left to his own thoughts, would soon begin to insist that he was from home, not unlike the delirium that sometimes attends a typhoid condition. Temperature ranging from about normal in the morning to 102° Fah. in the evening; pupils normal, tongue protruded straight, articulation distinct, bowels not constipated, kidneys acting well, no loss of motor power in any part of body, neither hyperesthesia nor anesthesia; case running very much as described above for the period of ten days, to March 5th, at the end of which time the vomiting ceased, either spontaneously or from the use of bismuth subnitrate, and pepsin. The fever appeared to yield to the use of quinia, and the insomnia to chloral hydrate and potassium bro. of each, grams .52 at bedtime. Appetite returned; beef essence, eggs and milk freely taken for the period of twelve days, to March 18, when appetite failed. During the abovementioned time the temperature, pulse, pupils, excretions, mobility and sensibility about normal, and yet the mental derangement was almost constant, apparently increasing a little from day to day, still

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maintaining the same characteristics. At this time the urine became scanty and very dark for about twenty-four hours, after which it cleared up and became more copious. Not much change for four days, to March 22d, when it was apparent that death was near at hand; pulse frequent and compressible, surface covered with perspiration, coma almost complete, breathing sterterous, extremeties cold, face cyanotic, pupils about normal, and continued so until a short time before death, which occurred on the 23d day of March, without paralysis of any kind, so far as we could judge. Was subject to attacks of vomiting at irregular intervals all through life; suffered with a head affection of some kind at the age of twelve, a concise history of which could not be obtained, and yet we learned that he had severe pain in head for some time, and some mental alienation from which he appeared to fully recover, and passed on to manhood well developed, both mentally and physically, and became a very energetic business man, with more than average intelligence, business capacity and energy, accumulating quite a fortune. His intelligence and force of character continued unimpaired until attacked with his last illness.

Autopsy, twenty-four hours after death—Present, Drs. Woodburn, Newcomer, Marsee, Burford, and the writer. On removing the skull-cap, from one to two ounces of serous fluid escaped, showing an excess in cavity of arachnoid; fluid in subarachnoid space apparently normal in quantity; membranes natural in appearance; brain, externally, everywhere of normal consistence, interior not examined. A remarkable cyst, or growth, was discovered on left hemisphere, situated immediately to the left of longitudinal fissure, covering the most of upper and lateral surfaces of middle and anterior lobes, weighing 97 grams; sack, 35 grams; measuring 14½ centimeters in length, 6½ in width, 3¾ in depth. It was situated under the dura mater, and above the visceral arachnoid, with a marginal attachment to the falx cerebri, at the upper edge of the longitudinal fissure; the outer margin, ends, upper and under surfaces, free everywhere from adhesions or attachments of any kind, only at the point mentioned. Drs. Newcomer and Henry Jameson made a careful microscopic examination of the contents of tumor, and report it filled with a sero-sanguineous fluid; the brain under the tumor greatly sunken, and convolutions thoroughly flattened.

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COMMENTS—Was the tumor of recent growth, and did it cause death? We believe the tumor began its development at or near the age of twelve, when the head symptoms were complained of, and that it continued to grow from year to year until death; and was probably due to a blow or fall, causing an abnormal condition or action in the way of disturbed circulation, either in the form of congestion or subacute inflammation within the cranium, at or near the seat of the tumor, from which the abnormal growth was developed; and that the tumor could not be considered a leading factor in the production of death. If the tumor had played an important role in the result, the symptoms of compression must have been present—namely, hemiplegia, coma, dilated pupils, slow pulse, sterterous breathing, possibly involuntary discharges from bladder and bowels, etc.

The cause of death was, probably, nervous exhaustion, resulting from defective nutrition and over-mental and physical labor, and to all this the abnormal growth may have contributed somewhat to the fatal result.

This case is one of unusual interest, first, because we are unable to find a description in any of the authorities of a growth within the cranium, or in any other part of the body, having the slightest resemblance to this one. And, second, because we see in this case that the brain may be subjected to great pressure, to the extent of flattening the convolutions and pressing the brain out of shape, without producing the usual symptoms of cerebral compression, if such result is brought about in a gradual way. We know that very much less pressure than is here shown, if the result of an instantaneous work, would have caused hemiplegia, coma, probably convulsions, dilated pupils, sterterous breathing, slow pulse, and if long continued, death. It is demonstrated, beyond all question, in this case, that in the very gradual development of cerebral compression there may be an entire absence of all physical symptoms, without any impairment whatever of the normal functions of the compressed organ, or evidence of the presence of such pressure.

I am greatly indebted to Dr. J. H. Taylor for a very complete cast of the brain showing the exact location of the growth and the extent of compression of hemisphere.

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A CASE OF ARSENICAL POISONING.

ALBERT G. PRESTON, M. D., GREENCASTLE, IND.

May 10, 1880, I was called to see Mrs. H., who, some two hours previous, by a mistake of her husband, had swallowed a No. 2 gelatine capsule, filled with arsenic instead of quinia. The poison had been swallowed some ten or fifteen minutes before a hearty dinner. The mistake was not discovered for about an hour and ten minutes afterward, when she was seized with violent pain and cramping in the stomach.

I found Dr. Pitchlynn in attendance, who had given a brisk emetic, which had acted promptly, and had given Park, Davis & Co.'s dialyzed iron liberally after the first free emesis. It was repeated after each effort at vomiting, in doses varying from four to sixteen grams, variously diluted and in the undiluted form, without relieving the burning pains and cramping in the stomach and bowels. Wyeth's dialyzed iron was also tried without affording any more relief. The quantity of dialyzed iron taken was more than 124 grams. At 5:30 P. M. we weighed one of the capsules and found that it contained of arsenic, grams .78, the stomach rejecting at this time everything swallowed almost as soon as taken into it.

I, having had 186 grams of hydrated peroxide of iron prepared, gave 47 grams at a dose. She made one effort to vomit after taking it, but without succeeding. In thirty minutes the patient remarked, "I am relieved—this last dose has gone to the spot that hurt first, and from which all my pains and cramps seemed to originate." At the end of two hours, there being no re-

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turn of the distressing symptoms, I gave hypodermically sixteen milligrams of morphia, with instructions that should the vomiting recur, the dose of the hydrated peroxide be repeated, and at alternate intervals during the night gum arabic water and milk be administered. During the earlier part of the night she complained of great thirst and was allowed free use of the milk and gum arabic water, but she rested well, free from pain or vomiting.

May 11, 8 A. M. Found my patient much improved and hopeful. I administered six grams of Husband's magnesia, to be followed in an hour by a glass of lemonade. The bowels were purged freely, the stools well darkened with iron, after which she vomited twice, throwing off large quantities of bile. The nurse, supposing that the vomiting was caused by the arsenic, gave another dose of the hydrated peroxide of iron. There were no further symptoms, and she rested comfortably from this time on.

May 12, she was able to be up, complaining only of soreness and tenderness over the stomach, and since which time she has been able to attend to her household duties.

I have theorized in this manner—the capsule containing arsenic was taken into an empty stomach several minutes before dinner; that the gelatine capsule dissolved readily, probably before she ate, and that the arsenic did not spread over a large surface, and had adhered closely to the stomach; that the dialyzed iron, diluted or in its full strength, was too light to mingle with the arsenic so as to neutralize it. The hydrated peroxide of iron was rendered into a thin paste which would settle and spread when taken as the arsenic had been done on an empty stomach, covering the corroded part as though a wet blanket had been thrown upon it.

From the many cases reported treated with dialyzed iron I believe it to be a good remedy; but from the observance of this case I should prefer in another similar case to have plenty of both, but particularly the hydrated peroxide of iron. In a case of poisoning by arsenic in liquid form, I think I would prefer dialyzed iron to hydrated peroxide.

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EMPYEMA—REPORT OF A CASE.

A. A. HAMILTON, M. D., MARION, IND.

Empyema, pyothorax, or suppurative pleuritis, are synonymous terms, implying a diseased condition characterized by an accumulation of pus in the pleural cavity.

The disease may be either acute or sub-acute at the beginning, but it always has a tendency to become chronic. It is, therefore, a variety of chronic pleuritis.

Prof. Flint claims that this affection is a "distinct variety of pleuritis from the beginning, and that it does *not* supervene upon the simple form of the disease." Moreover, he says that "the pathological character of this disease is inflammation, *resulting* in suppuration;" and that "the formation of pus depends on an *inherent* tendency existing at the outset."

On the other hand, Prof. Gross and other distinguished writers seem to acquiesce in the opinion that *ordinary* pleuritis, with effusion, may, and in fact frequently does, eventuate in the suppurative form of the disease.

Different cases of empyema vary in regard to the quantity and consistence of the contents of the pleural sac. The contained fluid may be composed of pure pus; or it may be a mixture of pus and serum in varying proportions. The quantity of pus may be quite small; or, on the other hand, it may amount to several quarts, or even gallons.

Again, the matter, though usually confined to one sac, may be contained in separate cavities formed between layers of false mem-

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brane. Prof. Gross says that he has "repeatedly met with cases of chronic pleurisy in which three or four such cavities existed; some being filled with pus, some with serum, and some with a mixture of these fluids."

One of the results of the accumulation of this fluid in the pleural cavity is to *compress the lung.* If the quantity is very great the lung may be compressed into a small mass "no larger than the hand," and may be forced to the back part of the chest against the spinal column, where it may be firmly bound by adhesions, or bands of lymph. In this case, even if the effused liquid be removed, the lung is rendered useless; it can not expand, the affected side becomes flat and shrunken. If, however, the purulent collection be gotten rid of before solidification from continued pressure has taken place, there is good reason to hope that the injured organ may in time be restored to use.

The onset of suppurative pleuritis is marked by about the same train of symptoms as other varieties of pleurisy; consequently there are no distinctive points in its clinical history by which we are enabled to differentiate this from ordinary pleuritis. It is true that by physical signs and by a careful study of the symptoms—subjective and objective—we can generally determine the presence of *some* fluid in the cavity, but we can not say positively what the character of that fluid may be—whether serum or pus. There is, however, another way of determining this question. "By the use of an exploring trocar or an aspirator, a small quantity of the fluid may be withdrawn and examined, and the character of the fluid ascertained by the gross and microscopical appearances of the specimen." In the absence of an aspirator, a hypodermic syringe may be used as an aid to the diagnosis of this, as of many other diseases.

Whatever instrument is used should be employed early, for it is highly important that the presence of pus in the pleural sac be detected as soon as possible, so that proper measures of treatment may be instituted early in its career; for, as a general rule, *the longer the disease is allowed to progress,* and the greater the accumulation of matter in the sac, the less the chance for recovery.

If, then, in a case of suspected pleuritis, the quantity of liquid continue to increase in spite of the measures used to promote absorption, the purulent character of the liquid within the chest may

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be predicted with considerable confidence. If, in addition, a fluctuating tumor be detected, situated over an intercostal space on that side of the chest, the diagnosis is rendered almost positive.

Should the surgeon neglect to give exit to the confined matter, nature, sooner or later, effects an opening through the chest walls, or into the lung, or perhaps both; and, if the patient survive, the pus is discharged. But, as just intimated, even in case of spontaneous opening, death is liable to occur suddenly; either from syncope, if the matter discharge internally, or from suffocation, in consequence of the sudden filling of the bronchial tubes, if an opening be made into the lung. If the pus is not discharged at all, "there is always danger of death from sudden and fatal orthopnea."

The prognosis in suppurative pleuritis will depend on the treatment adopted and the conditions present in each individual case.

If, after the matter has discharged itself or has been withdrawn by the surgeon, the membrane continues to form pus, filling the sac again and again, emaciation and debility will result, and death from exhaustion follow.

If the disease occur in a subject already affected with tuberculosis, or some other serious complication, the prognosis is still less favorable. Nevertheless, a large per cent. of cases will recover if properly conducted.

TREATMENT.—In the first stages of this disease the same measures of treatment are indicated as in other varieties of pleuritis, and hence medicines to ease pain, control inflammation, and lessen or prevent effusion, are appropriate.

But after the pleural sac has become *filled with pus*, the treatment usually adopted in simple pleuritis, with *serous* effusion, would be useless or even injurious. The pus can not be absorbed, and consequently blisters, cathartics, etc., are of no avail. In this condition of things thoracentesis is the remedy, and the sooner the presence of matter is detected and the operation performed, the better for the patient. There are two ways of getting rid of the purulent collection: 1. By repeated aspirations. 2. By making a permanent opening, or the open method, as it is called.

Before commencing the operation of thoracentesis a hypodermic injection of morphia should be given. Its advantages are stated as

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follows:[1] "1. It very much mitigates the suffering inherent to the operation. 2. It protects those operated upon from syncope. 3. It obtains for them a sense of comfort, which is produced as soon as the operation is finished."

Again, according to Dr. Bowditch, the following precautions should be observed in performing the operation: "1. Ether should not be given. With the lung compressed, as it is in these cases, there is always danger in administering it. 2. Stop the suction—or flow—the moment the patient begins to suffer any unpleasant feelings—stricture of the chest, severe harassing cough, etc." He thinks that death often follows the operation from failure to observe these rules. He says further: "At times, however, after repeated operations, phthisis is liable to set in. In such a case, the repeating of the aspiration I deem *a bad mode of proceeding.* The better mode is this: If, after once or certainly twice operating with the exploring trocar, I find this constant tendency to the reaccumulation of pus, I advise that a free and permanent aperture should be made. This may be done in two ways:

1. By a trocar and canula just large enough to admit the passage of a drainage tube. I plunge in the trocar and let the pus flow, regardless of the entrance of the air; the canula being held firmly to the thorax by the sticking plaster, to which the canula has been sewed before operating. In a few moments, however, I order either a plate of cotton wadding or a bunch of oakum, or a poultice, and allow the pus to flow as freely as it may, urging the patient to lie if possible, so that the opening will be in the most depending part.

2. The other operation which I have advocated is a free incision of one or two inches between the ribs. This, of course, is a much more painful operation, but I am inclined to think the *better of the two.* The essential object, however, that we wish to attain is a permanent and free discharge of pus."

Although thoracentesis is one of the oldest operations in surgery, it was scarcely ever resorted to until within the past few decades. The principal objection urged against the operation was the danger of admitting air into the pleural cavity. But it has been shown by Trousseau, Bowditch and others that the entrance of a moderate

(1) American Bi-Weekly, Vol. 6, No. 6.

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amount of air into the cavity does little or no harm. Air has been injected into the pleural cavity for the relief of aneurism, when there was no effusion, and without injury. Again, in stabs and gunshot wounds of the chest and abdomen, air is allowed to enter these cavities, and yet the subjects not unfrequently recover notwithstanding. So, also, in performing ovariotomy, the surgeon is compelled to admit air into the peritoneal cavity, and it does not appear why air should exert a more deleterious influence in the one situation than in the other. True, the air, if confined in the cavity, might hasten the decomposition of pus; but the opening should be large enough to permit the free entrance and exit of all air. In case there *is* decomposition of the contained pus, this can be easily overcome by mild antiseptic injections.

In regard to subsequent treatment by injections, Dr. Bowditch says: "I would say that when laudable pus is thrown out, and the lung is gradually expanding, if the patient be improving, *I do nothing.* Why should we? I can see no valid reason for interfering. I think some patients have been made much worse (in Berlin, for example) by overdoing in this way of 'washing out the cavity.' But suppose the patient fails, and has hectic fever, etc.; I then try injections of warm water, and at times they are all that is needed, and produce the most happy results. I find they have done better in my practice than any more stimulating treatment. Constant drainage," says this distinguished practitioner, "is my rule."

Prof. Flint also advocates free drainage, and in case the opening be far above the bottom of the sac, and a portion of the pus is constantly retained, he recommends that a counter-opening be made, so that the pus may be discharged as soon as formed. Like Bowditch, he advises injections of warm water in case there be fetid pus in the cavity.

Bryant, in his late work on surgery, recommends the same treatment, and says that for his own part he believes that the pus should be let out by means of a free opening large enough to permit the free escape of all fluids and the ingress and egress of all air. He, too, advocates drainage and washing out the cavity in certain cases.

The method of treatment by stimulating injections of tinct. iodine, carbolic acid, etc., does not appear to meet with general

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favor, although cases of cure following these injections have been reported. Among others, one of eighteen months' standing in the practice of Dr. Willien, of Terre Haute, Ind.[1] The object of injections, when used in this disease, is to liquify and remove thickened pus; to correct fetor, or to hasten the agglutination of the opposite pleural membranes, thereby obliterating the sac and preventing the accumulation of matter, thus curing the disease. The obliteration of the pleural cavity may be further hastened by the external application of diluted tincture of iodine.

A supporting treatment is demanded in this, as in all other wasting diseases, and, therefore, tonics, stimulants and a nourishing diet are indicated.

These few remarks as to the diagnosis and treatment of suppurative pleuritis have been offered mainly for the purpose of showing my authority for the course pursued in a case of the kind which I am about to report to you, the history of which is thus recorded in my note book:

Edgar C., aged eighteen years, has always been healthy—with exception of occasional attacks of ague—up to date of commencement of present illness. About the middle of January, 1877, while at work on a farm, he first felt an aching in the small of his back. He continued working for several hours longer, until finally he coughed up some blood, and soon after was taken with a hard chill. In a short time after reaching his home he became delirious, and his mother sent for Dr. ———. The doctor called his disease brain fever; then, after the delirium left him, which was at the end of two days, lung fever; then typhoid fever, etc. He says that as soon as he came "to himself" he felt terrible pains all through his right side; could not cough, move nor take a full breath without a great increase of pain. At this time he could not lie on the affected side. After a few days the pains in his side lessened, and he became easier. After this he noticed that his breathing became more and more embarrassed and quickened, and that now he seemed to breathe easiest when lying on that side. In a short time the pains in his side returned, though in a milder form, and he commenced to suffer, also, with pains in his right side and shoulder. About six weeks from the time he was taken sick a small tumor formed in

(1) Cin. Lancet and Observer, May, 1876.

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the upper and anterior part of his chest. The doctor pronounced this swelling, and the pains in his arm and chest to be due to neuralgic rheumatism, and said he would be better in a few days. After several days, as he was no better, he sent to the doctor for more medicine, but he did not send any, saying it was not worth while, as Mr. C. would soon get well without it.

Doctor saw the patient again two days before I was sent for, and gave him a liniment and some medicine for his neuralgia; also some cough drops.

After getting the above history, I hastily examined him. He is greatly emaciated, has an excited appearance, and seems to be in great suffering. He has every appearance of impending dissolution, and certainly can not weigh more than *ninety* pounds. His breathing is short and hurried, and he talks with difficulty, stopping between each word as if exhausted. His pulse is feeble and greatly accelerated—110 to 120 per minute. He is coughing nearly all the time, and expectorating large quantities of almost pure pus. His right side seems to be much enlarged, swollen and puffy, and the intercostal spaces are bulged outward. There is marked dullness on percussion all over the right side, and upon auscultation no air could be detected entering the lung. At the upper and anterior part of the chest there is a soft fluctuating tumor, about the size and shape of the half of a small apple. Upon placing my hand on this tumor, I found that its center was situated over the space between the third and fourth ribs and about six and a quarter centimeters from center of sternum. When firm pressure was made over it with the hand the tumor seemed to disappear entirely within the chest, to appear again as soon as pressure was removed. I noticed, also, that when the boy coughed the tumor seemed to suddenly fill and become distended. Having examined him, I told his friend that I felt satisfied that the boy was then, and had been, suffering with empyema, and that there had been a small opening made into the lung, by which portions of matter entered and were expectorated. I told him, also, that I thought the pus was endeavoring to discharge itself at the site of the tumor already referred to. As I was in a hurry (having an obstetric case on hand) I promised to see him again in the morning.

March 20, 1877—Visited Mr. C. this morning, and found him in

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great distress and anxious for relief. Using my hypodermic syringe as an aspirator, I introduced the needle between the ribs through the center of the tumor, until I thought it had reached the fluid; then drawing upon the piston, the syringe was immediately filled with pure white pus.

Being now satisfied as to the contents of the pleural cavity, I introduced a sharp-pointed bistoury at the same place, and made a free incision about two and a half centimeters in length. The pus immediately began to flow, and continued to discharge, except at times when it was purposely arrested on account of some complaint on his part, for a day and a night, until over six liters of matter had escaped.

As soon as the sac was well emptied, the patient expressed himself as greatly relieved, and declared that he could breathe as well as ever before.

The wound was left open, and he was directed to lie on that side, with his head low, so as to favor the flow of matter toward the opening. He was ordered to use stimulants, and a good supporting diet, as beef tea, eggs, milk, etc.

April 3, two weeks after operation—The pleural sac is still discharging a considerable quantity of apparently healthy pus, but without any disagreeable smell. The patient rests well at night, coughs but little, has a good appetite, has but little pain, and breathes regularly and easy.

April 17—The boy is doing as well as could be expected under the circumstances. The sac is still discharging a considerable quantity of pus, but his appetite is excellent, he rests well at night, and is able to sit up or walk about the room at will.

April 20—Improving rapidly. To-day his chest measured 89⅜ centimeters in circumference; the left side measuring 45 centimeters, the right 44½ centimeters, showing the two sides to be nearly equal. He is steadily gaining in flesh, and were it not that his side still discharges some, he would consider himself well.

June 20, three months after the operation—At this date he has so far recovered as to be able to do considerable work, and has been plowing corn, teaming, etc. His side is still discharging some, but I have not as yet resorted to injections, for the reason that I have thought it best not to interfere so long as the patient was doing

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well. He still takes tonics and stimulants, and uses tinct. iodine externally. He also takes a cough preparation which he has been using from the first.

October 20, 1877—Mr. C. is now a stout, healthy young man. His side has entirely healed up; he has no cough nor other symptom of disease; performs the usual work of a farm laborer; weighs about 64 kilograms, and is firm in the belief that his life was saved by the operation of thoracentesis.

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GALL STONES.

C. B. STEMEN, M. D., FORT WAYNE, IND.

Dr. Bristowe, in his work on the Theory and Practice of Medicine, says, in speaking of the causes of *gall stones*, "the origin of these bodies is obscure." I shall not attempt to give the origin or the cause in this short paper, but will content myself by giving the symptoms, treatment and results of several cases. It would be neither interesting nor profitable to the members to hear a paper on the etiology of gall stones, as I would be compelled to refer to authors exclusively, and, as the profession is well aware, among our very best authors we find great diversity of opinion on this subject, some claiming that they are caused by congestion of the common bile duct and an increased secretion of mucus, others that they are in consequence of irregularity in taking meals, especially eating but twice in twenty-four hours, and others that the tendency to these concretions is hereditary, but shall at once proceed to give the cases which have fallen under my observation.

Mr. S., aged 34 years, a painter by occupation, had been suffering for three years, at intervals of from two to five weeks, with very severe pain in the right hypochondriac region; the pain would come on suddenly, and continue from two to twenty-four hours, when it would as suddenly disappear. After the pain subsided, there would be a slight jaundiced appearance of the skin and conjunctiva. I was called to see this patient in December, 1879, and found him suffering agonizing pain. I was informed that the homeopathic doctor who attended him had diagnosed the disease

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as neuralgia of the stomach. After obtaining the history of the case, I made my diagnosis—the *passage of gall stones*—and made a hypodermic injection of

℞ Morphia sulph ..... grams .016.
Atropia sulph..... grams .001.
Aqua ..... grams .97.
M.

and also prescribed

℞ Hydrarg. chlo. mit..... grams .65.
Pulv. jalapa..... grams 1.29.
M. Ft. chart, No. II.
S. one every two hours.

to be followed by

℞ Ol. terebinthina ..... grams 1.29.
Ol. ricini ..... grams 64.
M.

I also ordered that the dejections should be diluted and passed through a sieve, to verify my diagnosis. This was done, and two calculi were found, not, however, of very large size, but each had several facets, showing that there were more in the cyst.

I should have stated that the morphia and atropia administered hypodermically gave the patient relief, and in a very short time he was free from pain. The object of the atropia was to relax the muscular fibers of the duct, and thereby facilitate the expulsion of the calculi. Combined with morphia, I regard this one of the best remedies we have, as it meets the indications both of relieving pain and relaxing the muscular fibers. Chloroform may be advantageously administered by inhalation for the same purpose.

After finding the calculi, I resorted to the treatment recommended for dissolving the concretions. I gave the following:

℞. Ether sulphuric..... grams 16.
Ol. terebinthina ..... grams 8.
Chloroform..... grams 8.
Glycerina ..... grams 32.
M. S. Teaspoonful every three hours.

I also prescribed the following:

℞. Potassa bicarbonatis..... grams 2.
Podophyllin..... grams 13.
M. Ft. chart. No. X.
S. One every evening.

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I continued this treatment for three months, not, however, giving the medicines so frequently, and the patient has not had a return of the symptoms, but is in good health and laboring every day.

In January, 1880, I was called to a case of the same character, only in this I was not so positive in my diagnosis, as the man was also a painter and there were some symptoms of lead poisoning. I gave the same treatment, also the same directions with regard to diluting and straining the dejections, thereby finding three calculi. This case had continued for over five years, attacks occurring every few weeks. Since taking the medicines, now nearly five months, the patient has not had an attack.

I give you the treatment, not that I have had or have now, great confidence either in the alkaline carbonates or the ether and turpentine as possessing the power to dissolve these concretions, yet in the cases detailed they have certainly had a good effect.

These concretions contain over 80 per cent. of *cholesterine*, and the question arises: How do the ether and turpentine dissolve them? We may speculate and give our own views on this, as we frequently have to do in many cases concerning the action of remedies. It is well known that alcoholic liquors have a bad effect on the liver by being absorbed and then carried by the portal vein directly to this organ. May not these remedies be carried in the same way and thereby come in contact directly with these concretions and dissolve them? It is stated that a hepatic calculus placed in ether and chloroform is readily dissolved. I have not tried the experiment, but the assertion was recently made in one of the London journals, and to my mind this is the most reasonable conclusion.

The danger in these cases is the closing of the cystic, or common bile duct, and the consequent rupture of the gall bladder.

Mr. W——, who had been subject to attacks of severe pain at intervals for quite a number of years, and had been frequently treated by my friend and colleague, Prof. I. M. Rosenthal, who had diagnosed the case as the passage of gall stones, was, in June, 1879, seized with severe pain and cramping, and at this time called in a young physician, who could not give a clear and concise history of the case, but suffice it to say that in a short time the patient

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died. A post mortem was had, which revealed that the gall cyst was ruptured and the contents emptied into the peritonieal cavity, peritonitis, with great tympanites, being the result. I was present at the post mortem, and saw a number of concretions found.

I now come to the most interesting case which I have to present, that of Dr. John M. Josse, who died April 13, 1880. I will give a brief statement of the symptoms, as reported by Profs. Rosenthal and Gobrecht, previous to my seeing the patient. There had been prodromic symptoms, for over two weeks, of an undefined character; attacks of bilious colic previously. On Saturday, April 10, about noon, he was suddenly attacked with very sharp pain. Dr. Rosenthal visited him at 3 o'clock P. M. and administered opiates. Was called again on Sunday, 11th, at 3 o'clock A. M., and found that the excessive and agonizing pain continued, the opiates by the mouth not giving relief; he therefore made a hypodermic injection morphia sulph. grams .022, and repeated it in half an hour. This gave some relief. The pulse was low, irregular and intermittent. In a few hours pain returned, when chloral hydrat. grams .97 was given. At 9 o'clock A. M. of this day Dr. Wm. H. Gobrecht was called in consultation, when it was determined to administer mass hydrarg, opium and ipecac, to be followed in six hours with sol. magnesia citrate, grams 248. The patient was freed from pain, and slept; tympanites, however, manifested itself. He rested well until 3 o'clock A. M. on Monday, when he desired to urinate, but was unable to do so. The catheter was introduced and one and a quarter deciliters of urine removed. On this day (Monday, 12th,) I was in consultation with Drs. Rosenthal and Gobrecht; we found the patient rapidly sinking, and ordered active stimulation and alimentation, but he continued to sink until 9 o'clock A. M. on the 13th, when he died.

The post mortem examination revealed that there had been a rupture of the gall cyst, and its contents for the most part emptied into the peritoneal cavity. We found four gall stones of an irregularly round shape impacted in the common bile duct, averaging in size that of a small playing marble. The cyst contained about twelve grams of gall stones, consisting of one large mass and numerous small stones. The conclusion arrived at was that the patient had been for some time the subject of gall stones, as he had

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been suffering at intervals of three or four months with what was called bilious colic; but that the colic was due to the passage of gall stones there can be no doubt, and, as demonstrated by the post mortem, that some too large to pass became impacted in the common duct, causing retention of the bile and consequent rupture of the cyst, with the result above given.

I have thus, gentlemen, presented for your consideration facts which have come under my notice, and my practical dealings therewith; but little of theory has engaged our attention; this will, I hope, therefore be received for what it was intended—as a contribution to practical medicine.

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ERGOT: ITS USE AND ABUSE.

WILLIAM COMMONS, M. D., UNION CITY, IND.

In presenting a few thoughts on ergot, it is not presumed to bring forward a new subject, but rather to set forth a few new defined conclusions upon an old subject. Of all the articles in materia medica, no other one, perhaps, will so well illustrate the misfortunes of routine practice; nor will the history of any other exhibit so many lost opportunities for profitable observation as to its therapeutic effect, as ergot. The history of medicine, from its earliest foundation to the present time, is crowded with instances of observers and experimenters hovering on the edge of clinical facts, yet still settling on the side of empiricism and uncertain conjecture. This has been peculiarly the case with the use of ergot as a medicine. About eight hundred years ago, the first article on the use of ergot, as a medicine, was published, and from that time until now a dispute concerning its merits has been going on. It has been praised and abused by turns; it has alternately been written up and written down. Its identity has been in dispute, and the savants of the profession are not yet agreed as to whether it is a medicine or a nuisance; whether its effects on the animal economy are *ad partum* or *ad mortem;* whether it is an abortive agent, or whether it is itself an abortion.

The earlier written account we have of ergot was given by Gremblow, in 1096. During the succeeding five hundred years we have hardly any mention of it. In 1576 an epidemic of spasmodic disease, attended with dry gangrene, prevailed in some por-

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tions of Germany and France. The Medical Academy of Marburg attributed its origin to the use of bread contaminated with spurred rye and to the empirical use of ergot by German and French midwives. A hundred years later it was used by the midwives of Wurtemburg to facilitate labor. At about the middle of the eighteenth century a few Dutch empirics had gained great renown by its use. In 1774 it was denounced by the profession of France and its use was forbidden by the government. Yet three years later, "An accomplished accoucheur of Lyons extolled its efficacy, published many luminous reports of its activity and usefulness, and eventually succeeded in bringing it into general use. Nevertheless it did not find favor with physicians, and was well nigh forgotten by them for nearly half a century."

The first American physician to direct attention to ergot as a medicine was Dr. Stearns, of Waterford, New York, who, in 1807, wrote concerning it, under the name of *pulvis parturiens*, and stating that he had "for several years used it successfully to expedite lingering parturition when the pains had subsided and were incompetent to expel the fetus." His communication was published, and in a short time the medical journals of the land were teeming with laudations of ergot. Its use became fashionable and the spurred rye was a part of every accoucheur's curriculum. Its use became known to the laity also; the women called it "hurraw medicine," and used it to produce abortion. Just how many innocents have been killed by its use, ignorantly by the profession and designedly by those interested, will never be known this side of the final judgment.

While a student of medicine my teaching regarding ergot was varied. My preceptor, an accoucheur of large experience and remarkably good success, was skeptical as to its usefulness, and gave it with caution, and mostly not at all. Another practitioner, of equally extensive business, had implicit faith in its efficacy as a parturient, and gave it freely, and it is a remarkable fact that this last has had, during a long professional life, more instances of ruptured uteri, dead-born children, puerperal convulsions and widowered husbands than any other physician I have ever known. During my first term in college the professor, an aged and scientific man, used ergot in his practice and taught its use to his classes. The

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next, a man of equal age, and perhaps of more varied experience, taught that ergot was useless as a medicine, and when administered to a woman in the pregnant or parturient condition was wholly inert and without effect for good or for evil. With this uncertain teaching I began practice, and soon enough destroyed at least one young life—innocently, because ignorantly—through faith in authorities and those of the profession whose practice I deemed worthy of imitation, and because I gave ergot according to directions. Experience, however, brought judgment, and I have not since, nor am I likely to again, make such a blunder.

Twelve years of tolerably close observation and a reasonably varied experience in its use, have enabled me to arrive at a few definite conclusions concerning ergot. Ergot is a medicine, and when its mode of action is well understood, it may be administered with benefit in many diseased conditions of the human system. Its action is *prompt, uniform and specific.* Its effects can often be noticed within five or six minutes after injection. Its action is to cause the *contraction of circular muscular fiber, and a diminution of the caliber of tubular structures.* These effects are, as a rule, quite certain and reliable, and bearing them in mind, the use of ergot as a medicine can be taken outside of the pale of blind empiricism and given into the domain of rational therapeutics. By producing a contraction of circular muscular fiber, it will diminish the caliber of blood vessels, and may be administered with profit in cases of hemorrhage and where we wish to diminish a determination of blood to a part. It is applicable in the early stages of pneumonia. It can be given with benefit when we wish to retard or destroy abnormal growths. In such cases it will act by constringing the blood vessels leading to the part, thus cutting off the supply of blood from which the growth is nourished and cause its diminution or death by starvation. This is particularly the case in abnormal growths of the uterus.

Its specific effect on the blood vessels makes it a medicine *par excellence* in diseases of a hemorrhagic tendency, and in all cases of hemorrhagic diathesis. It is applicable in typhoid fever, when bleeding from the bowels is feared. I have given it in many cases of inveterate expistaxis, with the best of results, one case of which

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I will here cite. A little girl, four years old, was attacked with purpura. When first seen, she had vomited and purged blood; purpuric spots all over the body, and she was bleeding from the gums and from the nostrils profusely. I gave five grams of fluid extract of ergot, and in fifteen minutes the hemorrhage was seemingly lessened. The dose was repeated, and in another quarter of an hour the bleeding was visibly checked. I now gave four grams more, which completely arrested the hemorrhage, and the child made a good recovery.

Ergot may be given with advantage in hydrocele and in hydrocephalus, a sample case of which I will cite. November 11, 1877, a child three weeks old was brought to my office, afflicted with hydrocele and hydrocephalus. It was badly nourished, comatose, shriveled and unconscious. It would make no effort to nurse, but would swallow a little milk when placed on the back part of the tongue. It would not cry, but would often emit a sickly moan. The fontanelles were bulging, and the sutures of skull were separated. The head lay helpless on a pillow; bowels constipated. I tapped the hydrocele, and drew off 64 grams of fluid. Gave fluid extract of ergot, grams .13, every two hours, and directed the child to be kept warm and nourished. On the 14th the child was not quite so lifeless. Tapped the hydrocele again, and drew off a less quantity of water. Continued same treatment. On the 20th tapped again, and drew off about 32 grams. The child now showed decided improvement. Continued the treatment with diminished doses. On the 25th drew off 8 grams of fluid. The child was now nursing, and beginning to show some interest in life. The effusion on the brain was checked, the fluid being absorbed. Continued the ergot in same doses as at first, three times a day for a week, and the child recovered. It is now a healthy and intelligent boy, without a trace of the disease.

I have derived more satisfaction from the use of ergot in the treatment of hemorrhoids than from all other remedies. Wash out the rectum with copious injections of cold water and inject from four to eight grams of fluid extract of ergot in a solution of starch, and keep quiet. In most cases the tumor will shrivel up, the engorged vessels will contract, and the trouble be relieved. In one case the ergot produced some stricture at the neck of the bladder,

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but it was only the specific action of the medicine in contracting circular muscular fiber and diminishing the caliber of tubular structures, and readily yielded to the effects of morphia and time.

Not to consume time with minor particulars, I will come at once to the action of ergot on the uterus. From time immemorial it was observed that cows fed on ergotted grain and fodder would drop their calves prematurely, hence it was concluded that ergot would evacuate an impregnated uterus, and it came to be used for that purpose, both legitimately and criminally. Will ergot produce abortion or miscarriage? It certainly will. Not by causing the contraction of the womb and the expulsion of its living contents, but it will act upon the blood vessels by which the ovum is nourished, and, by diminishing their capacity, will gradually cause death by starvation and asphyxia. Then the ovum, being dead, becomes a foreign substance, and nature, who is always ready and usually prompt to preserve the animal economy from injurious things, will bring on contraction of the uterus, and its offending contents will be expelled. In the same manner precisely will ergot retard the growth or cause the destruction of a uterine polypus.

Regarding the use of ergot in obstetric practice, I will say that it is in no sense a parturient agent. It will not originate labor pains, nor will it in any way facilitate delivery; but by its peculiar action on circular muscular fibers it may interfere with both of these. I am aware that this opinion is in opposition to the teaching of books, and the belief of more physicians. The declaration is not made in the spirit of pedantry, but in the sincerity of honest belief, arrived at by observation and exercise of judgment.

The anatomy of the uterus has been neglected, and the relations of its several parts and structures are not generally well understood. A diversity of opinions has existed, and still exists, concerning the nature and composition of the structures which form the uterine walls. Suffice it to say that they are made up of three kinds of muscular fiber—longitudinal, oblique and circular—and that the circular fibers greatly predominate in the lower third, in the neck and around the os. There is belonging to this organ a normal activity, both in the impregnated and in the pregnant condition. This activity in the impregnated uterus is, during nine months, retentive; it then becomes contractile, expulsive, vermicular and re-

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tractive. In the unimpregnated uterus the circular fibers are spread over the lower third of the body and around the neck. When pregnancy occurs, the viscus begins to undergo a transformation; its several structures take on new developments and assume new functions. As pregnancy advances the cervical canal becomes shortened by degrees, its upper portion widening little by little, corresponding to the increased capacity of the lower part of the uterine cavity, of which it eventually becomes a part. During this new development, the oblique and longitudinal fibers of the cervix enter into the composition of the body of the uterus, whereby the circular fibers, by which the neck is surrounded, are rolled back, slid off and placed in a relatively new position, forming a sphincter or *constrictor oris uteri.* At the full period of gestation these fibers are rolled together in the form of a ring, which drags together the ends and loops of the longitudinal fibers and closes the mouth of the womb, like a cord drawing together the mouth of a bag. Not only this, but this firm ring forms a point of departure, upon which the longitudinal and oblique fibers can act when parturition occurs. When excited by powerful contraction they will draw upon this circular band and pull it open. Now, if at any time during labor a dose of ergot is administered its effect will be to produce tonic contraction of this circular muscle, and instead of expediting the process will retard it.

It is not denied that ergot will increase the pains of labor—for this it will very readily do. It will enhance the agonies of childbirth quite materially. But the pains produced by ergot are not expulsive and alternating, with an interval of rest between, but constant, persistent and colicky, greatly magnifying the suffering of the woman, increasing her danger by liability to rupture of the uterine walls, and tending to destroy the life of the child by pressure on its body and blood-vessels. If ergot is administered and the process of labor protracted, and if nature, ever vigilant and willing to save the woman from the ignorance and meddlesomeness of doctors, can force delivery, the child will be born asphyxiated; otherwise it will be cyanozed, with a disposition to atelectasis and spasmodic contraction of the heart.

That ergot will retard and even entirely check a natural labor is established by observed cases, as, for instance: At 9 A. M., January

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2, 1877, I was called to see Mrs. N., who had been in labor fifteen hours. Her physical conformation was such as to render parturition easy and rapid, as had, indeed, been the case with her five previous confinements. In the present instance there was nothing abnormal whatever, and labor was progressing favorably, until the attending physician, in the exuberance of his ignorance, began giving ergot, when the action of the womb became "panicky." More ergot was given, and with each successive dose the trouble increased, until, when seen, the process was entirely suspended. She was suffering intense agony from constant, colicky pain, originating from the neck of the uterus and spreading over the abdomen. The head of the child was presenting at the external outlet, where it had been for six hours; while the ring of circular muscle around the mouth of the womb could be felt as a hard band compressing the back and lower part of the head, face and chin. The womb was pressing down on the body of the child in a tonic spasm. The woman was exhausted, and literally running over with the fluid extract of ergot. It was regurgitating from the stomach, and running from her mouth down on the pillows; while the physician in the case had abandoned her three hours before, and was now running about over the town, hunting some one who could tell him of the best preparation of ergot. I changed the woman's position and used manipulation for some minutes, but could arouse nothing like an expulsive or intermittent action of the uterus. I now gave a dose of quinia, and in fifteen minutes there was a slight bearing-down effort, soon followed by another of increased vigor, and then a prolonged and powerful action, which expelled the child and all its appendages from the womb, something like the exit of a wad from a pop-gun. Upon examining the fetus, there was seen around the upper part of the back of the neck, around the face and chin, a sharp indentation, caused by the firm contraction of the rigid os uteri. The rest of the face, the forehead and scalp, were tumid and engorged with blood. The rest of the body was pale and bloodless. The ergot had produced violent contraction of the muscular band around the mouth of the womb; it had resisted the efforts of the longitudinal and oblique fibers, and the whole organ being thrown into a tonic spasm, had literally squeezed the life out of the child.

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Ergot, however, has its legitimate use in obstetrics. When labor is about completed and post partum hemorrhage is feared, one or two full doses of the fluid extract of ergot, given at short intervals just before the birth of the child, will, as a rule, obviate all danger. But delivery must be readily effected, for if the process is delayed the life of the child will be endangered. Moreover, the accoucheur must be prompt in removing the secundines, otherwise the mouth of the womb will close down and retain them, as in the following case:

Mrs. W. was delivered of a child at 10 A. M., February 5. Just before the birth of the child, two doses of four grams each of fluid extract of ergot were administered at short intervals. The accoucheur was in no hurry to remove the after-birth, and after some delay applied traction to the cord and found the placenta fixed. A small degree of force was used and the cord separated. A portion of the placenta, protruding from the mouth of the womb, was removed; the remainder was left inside and the woman put to bed, seemingly comfortable enough. Nothing occurred until midnight of the 6th, when flooding commenced. I was called in consultation, and saw her at noon on the 7th. Found her exsanguinated and moribund. The placenta could be felt just inside the os, and was, with some difficulty, removed. The patient rallied somewhat, partook of nourishment, was placed comfortably on her side and died. The ergot, given just before the birth of the child, had, after its delivery, closed the mouth of the womb firmly upon the after-birth, retaining it without trouble other than a constantly aching sensation in the region of the womb for thirty-six hours, when relaxation occurred and the bleeding commenced. Furthermore, when labor is fully completed and all the contents of the uterus evacuated, ergot will enhance after-pains by causing contraction of the os and retention of coagula.

One other danger will arise from the use of ergot in obstetric practice. At or near the middle of the uterus is an aggregation of transverse fibers, running throughout the entire circumference of the organ. In the unimpregnated state these fibers are weak and scarcely perceptible. But with the beginning of pregnancy they begin to develop, and as the condition advances they grow and increase, as the exigencies of the occasion demand, until at full

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term they form a strong circular band, into which the longitudinal and oblique fibers interlace and lock, thereby acquiring a firm hold, which enables them to exert a force in expelling the child which they would not otherwise possess. If, now, delivery occurs while ergot is exerting its specific influence on the system, and if the placenta is situated high up, and not promptly removed, this circular band will contract firmly down, causing an hour-glass contraction, and imprisoning a part or all of the after-birth in the farther chamber. On several occasions I have had tangible evidence of such an occurrence, and as a precaution against it in all cases a prompt removal of the placenta is demanded.

The toxic effects of ergot are well described in the books. The little girl spoken of above, who took twelve grams of the fluid extract, had marked dilatation of pupils and was semi-comatose for several hours. Mrs. N. had taken an indefinite quantity, but the commotion in the system, caused by her inordinate suffering, had prevented its absorption and fortunate regurgitation had saved her from its poisonous effects.

Another danger from excessive use of ergot is, perhaps, not sufficiently recognized. The heart is a contractile organ, well supplied with circular and oblique muscular fibers; and here, as elsewhere, they are subject to the specific action of ergot, and dangerous spasmodic contraction may be caused by its use, as has already been said in this paper. I will cite a case in illustration. On Friday morning, July 26, Mrs. S., a healthy woman twenty-one years old, being advanced to the end of the third month of pregnancy, took a walk through the town, in the course of which she called at the rooms of a midwife and was operated upon, the membrane being punctured. Next day she had decided symptoms of abortion, but returned to the same midwife and received a prescription, at the time unknown. Next morning at 4 o'clock she aborted, with little or no hemorrhage, and with no one present except her mother. She was left to herself, and at 7 o'clock was found to be in a dangerous condition. Saw her at 8 o'clock, and found her deeply comatose, with largely dilated pupils, the entire body cyanosed and the heart beating very slowly, with a weak, quick and irritated sound, which in a few minutes ceased entirely. The body emitted a disagreeable smell, and putrefaction advanced so rapidly as to make an early funeral imperative. One week later, her father brought to my

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office a four-ounce vial, containing a small quantity of fluid extract of ergot, and a quart fruit can containing 32 grams of spurred rye which had been well steeped. Circumstantial evidence went to show that this woman had, within the twelve hours next preceding her death, swallowed not less than 93 grams of the fluid extract, and the infusion of 32 grams of ergot. Her death was caused by spasmodic contraction of the heart.

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HUMAN LONGEVITY.

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Having noticed from time to time, in the newspapers and periodical publications, accounts of persons who were reported to have lived more than a hundred years, some who reached the extreme age of one hundred and twenty or one hundred and thirty years, I was led to investigate the subject of human longevity, and ascertain whether such extravagant statements were entitled to credence, and whether the facts extant on this subject, and the deductions from physiology, would justify the conclusion that human life can be extended materially beyond a hundred years.

The subject of longevity is certainly one of great interest and even of scientific importance, and I have accordingly judged it to be a proper theme to be presented before the assembled representatives of the medical profession of Indiana. The time has come when this question should be divested of its fictions, and that facts and rigid investigation should support the loose and unmethodical means hitherto employed in determining the extreme limit of life. This loose and uncritical manner is well exemplified by Dr. Dunglison in his work on Human Health, in relation to the mode in which the London bills of mortality were kept. He says they were not drawn up by medical practitioners, "but by parish clerks on the report of two old women in every parish, called *searchers*," whose reports he thought could not be depended upon "as registers of individual diseases," but "might be esteemed sufficiently accurate as *registers* of ages." As registers of ages, being based entirely

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upon hearsay testimony, they are almost worthless in an inquiry whose object is to determine the question, how long can a man live? It is, indeed, very singular that a subject of so much importance should have so long been treated in a negligent and unscientific manner, and that false and fictitious opinions concerning the extreme limit of life should prevail and pass unchallenged even by the votaries of science. The greater portion of the statistics that have hitherto been collected and compiled are wholly unreliable, as they seem to have been mainly drawn from current reports and traditions, which have been assumed to be true without investigation. We have a clear manifestation of this in the mortality statistics of the seventh census of the United States, as elaborated by De Bow, which I shall show hereafter are worthless as data in an investigation of this nature.

But while the question of longevity has been a mooted one for many centuries, rendered so, perhaps, more from the extravagant views of theorists than from any intrinsic difficulty pertaining to it, yet we find that very correct notions were entertained in relation to it at an early period of the world's history. The Psalmist said that "The days of our age are three score and ten, and though men be so strong that they come to four score years, yet is their strength but labor and sorrow, so soon it passeth away and we are gone." This expression was undoubtedly made in accordance with the then prevailing knowledge as to the usual limits of human life, though it does not seem to exclude the possibility of exceptional examples attaining a greater age than eighty years. It shows clearly that the ordinary span of human life was then substantially what it is now. Then, again, as to the extreme limit of life attained in exceptional instances, we have the declaration of Jesus the son of Sirach (Ecclesiasticus, xviii: 9), that "The number of a man's days at the most are a hundred years." Now I think it can be shown that this limit to the extraordinary life of man is approximately correct, and is consonant with the deductions of physiology and with the latest and most recondite investigations on longevity.

There have been numerous well authenticated instances of centenarianism and a few examples, apparently well authenticated, of persons living two or three years more than a century, but nearly all the reputed cases reaching a greater age than this have been found to

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rest upon defective evidence, and can not be accepted as proven. If it can be shown, by an accurate investigation of the examples of extreme longevity reported in any populous or long-settled civilized country, that the limit of life has not exceeded one hundred and three or four years, it may be taken as the approximate measure of the limit of life in all countries and among all races of mankind. This I shall attempt to show in regard to the reputed cases of extreme longevity in England, where a searching investigation has torn off the mask of fiction that has so long misled and deceived.

In the preparation of this paper I have examined numerous authorities which I have placed under contribution, among which I would specially mention the valuable work of P. Flourens, of Paris, on "Human Longevity," and "Human Longevity: its Facts and Fictions," by W. J. Thoms, Deputy Librarian of the House of Lords, England.

Buffon asserted that "the man who does not die of accidental causes or disease reaches everywhere the age of 90 or 100 years, and that the varieties of race, climate, food, conveniences, has nothing to do with the duration of life," and that nothing can change the physical laws which regulate the number of our years. Flourens accepts these views as correct, and asserts that the duration of life depends more upon the intrinsic virtue of our organs than anything else.

Haller takes an extreme view of the question, and assumes that man may attain the age of two centuries. His chief reason for this extravagant opinion seems to be based upon two examples of extreme longevity, viz., Thomas Parr, whose reputed age was one hundred and fifty-two years and nine months, and Henry Jenkins, one hundred and sixty-nine years. But as both of these examples, as will be shown hereafter, were fictitious, it follows that the foundation for his belief has been entirely swept away. Haller collected a great number of examples of reported cases of extreme age, among which he tabulated more than one thousand individuals who attained the age of from one hundred to one hundred and ten years; sixty from one hundred and ten to one hundred and twenty; twenty-nine from one hundred and twenty to one hundred and thirty; fifteen from one hundred and thirty to one hundred and forty; six from one hundred and forty to one hundred and fifty; and one

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(Henry Jenkins), one hundred and sixty-nine. With such *data*, assumed to be true, but, unfortunately, taken without proof, he expressed the belief that the limit of extraordinary life in man might reach two centuries.

It was Buffon who first pointed out the physiological law that expresses the relation between the period of growth in man and animals, and the duration of life. He placed this ratio at six or seven. Thus, if the growth of a horse is completed in four years he should live to be about six times that old, or twenty-four years; a dog, whose growth is effected in two years, should live twelve years, and so on for other animals. To man he allowed fourteen years for growth, and accordingly the duration of his life would be ninety to one hundred years. But the ratio adopted by Buffon, though approximately correct, is too high. It is now quite well determined that this ratio is five, or very nearly. Now, allowing the period of growth in man to be twenty years, which may be taken as a close approximation, the extreme limit of his life would be about one hundred years. The difficulty has hitherto been in determining the period of growth. We have seen that Buffon fixed it in man at the early age of fourteen years, which is entirely too young, and which led him to the adoption of a ratio too high. The period of growth must be marked by some physiological change, otherwise it is an uncertain and fluctuating quantity, whose multiplication by a fixed ratio must give constantly varying results. The period of growth, as now ascertained, has its limit at the time when the bones and their epiphyses become united, and this occurs in man at or about the twentieth year. Up to the time of this union man and animals continue to grow, and cease to grow when it is effected. Hence it may be assumed that the period of growth, as determined by the union of the bones and their epiphyses, is a reliable index to the duration of life, or its maximum. There is also a somewhat definite relationship between the period of utero gestation and the duration of growth, but my limited time will not permit me to pursue this question.

Much speculation has existed from early times in regard to the age of the elephant. Aristotle asserted its age was 200 years; Buffon at least 200; others 130, 140, or 150 years, and a few have held the opinion it might reach as high as 400 or 500 years. But

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it is now affirmed, on good authority, that the period of maturity is about thirty years, and of gestation twenty and a half months, which determine the age of an elephant to be from 150 to 200 years.

It is a well established fact that the extraordinary life of certain animals in the domesticated state, as the hare, dog, lion, camel, cat, etc., is occasionally prolonged to double that of their ordinary life. The usual life of the camel is forty or fifty years, but Aristotle asserts it may live to a hundred. The common age of the lion is twenty years, but it has been known to live forty. The usual age of the dog is twelve years, but there are numerous instances reported where it has lived twenty-or twenty-four years; and even cats, which attain their growth in eighteen or twenty months, have been known to live fifteen or twenty years.

From analogical considerations, fortified by a few fictitious examples of extreme longevity, it has been held that the extraordinary life of man might also double the ordinary physiological limit, or two hundred years. This possibility has been held out as one of the utopia of science; but, so far in human experience, it has been more *in posse* than *in actu.* The facts are totally wanting. The evidence upon which to base such expectations has not been produced. The longevity annals of thirty centuries have not produced incontrovertible proof of a single example in any age or country. No conditions of society, no mode of living, no circumstances, however favorable, have yet been sufficient to lengthen the span of human existence, in a single instance, to two hundred years.

Most of the cases of remarkable longevity that have been handed down to us rest upon no evidence except common report, tradition and vague and unreliable statistics. Bailey, in his records of longevity, furnishes us with a catalogue of three or four thousand cases reaching about the age of one hundred years, and a considerable number as high as one hundred and fifty years; and the opinion is given in the American Encyclopedia that there can be no doubt of the occasional prolongation of life to the age of one hundred, and even up to one hundred and seventy years. As this last limit corresponds closely with the reputed age of Henry Jenkins, it seems quite probable that the writer had that individual in his mind's eye when he penned this extravagant statement. From the same source

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we are informed that Peter Czartan, a Hungarian peasant, lived to the extraordinary age of one hundred and eighty-five years, but no evidence is produced to sustain the remarkable declaration.

Flourens says, "A hundred years of life is what Providence intended for man; that everywhere men live to one hundred years, with a good constitution, and even with a bad one." He admits there are very few who attain this age, for the reason that very few do what is necessary to attain it; that "with our customs, our miseries, man does not die—he kills himself."

He divides life into four stages, viz., a first and second infancy; a first and second youth; a first and second manhood, and a first and last old age. The first infancy reaches from birth to the tenth year; the second, from the tenth to the twentieth year; the first youth, from the twentieth to the thirtieth year; the second youth, from the thirtieth to the fortieth year; the first manhood, from the fortieth to the fiftieth year; the second manhood, from the fiftieth to the seventieth year. At seventy old age begins and extends to eighty-five, and eighty-five is the beginning of the second and last old age. The first youth commences at the termination of the period of growth; the second youth extends to the period when increase in size generally ceases. After the fortieth year, increase in bulk is due to accumulation of fat—a load of useless incumbrance. He very properly admits that there is no pause or line of demarkation between these ages, and that old age does not commence at an organ, but is a general phenomenon.

The mortality statistics of the United States, according to the seventh census, as elaborated by De Bow, are highly favorable to longevity and especially to the extreme view of the question, but a critical analysis will show that they are unreliable and worthless in the solution of the problem under consideration. According to the census report there were living, on the first of June, 1850, in the United States, 2,555 persons of 100 years and upwards. Of this number 787 were whites, 343 free colored, and 1,425 slaves, or total colored, 1,768. The whole population of the United States was then 23,191,876, which would give one centenarian to every 9,077 persons, a proportion at least ten times, if not one hundred times, too large. According to this, under an equal distribution, Marion county ought to have to-day a dozen centenarians—persons who

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were living during the Revolutionary War and contemporaries of Washington, Adams and Jefferson when this government was founded. I am not informed that a single example could be found. The white population in the United States in 1850 was 19,553,068, which would give one white centenarian to every 24,819; the total colored population was 3,638,808, which gives one colored centenarian to every 2,058. This shows that there were twelve times as many colored centenarians as white according to population, a conclusion which is too absurd to be seriously entertained.

The following table, compiled from the census of 1850, will show the total colored and white population of the Southern States, the number of centenarians living when the census was taken, and the number of white and colored centenarians who died between June 1, 1849, and June 1, 1850:

STATES.	POPULATION.			Total No. of Persons of 100 Years and Upwards Living June 1, 1850.	No. of White Persons of 100 Years and Upwards who Died between June 1, 1849, and June 1, 1850.	No. of Colored Persons of 100 Years and Upwards who Died between June 1, 1849, and June 1, 1850.	Total No. of Persons of 100 Years and Upwards who Died between June 1, 1849, and June 1, 1850.
	White.	Colored.	Total.				
Alabama	426,514	345,109	771,623	162	3	22	25
Arkansas	162,189	47,708	209,897	24	2	4	6
Dist. of Columbia	37,941	13,746	51,687	7	...	1	1
Delaware	71,169	20,363	91,532	9	2	1	3
Florida	47,203	40,242	87,445	36	1	2	3
Georgia	521,572	384,613	906,185	221	5	43	48
Kentucky	761,413	220,992	982,405	157	6	10	16
Louisiana	255,491	262,271	517,762	176	3	25	28
Maryland	417,943	165,091	583,034	131	5	22	27
Mississippi	295,718	310,808	606,526	140	...	26	26
Missouri	592,004	90,040	682,044	45	6	3	9
North Carolina	553,028	316,011	869,039	249	11	36	47
South Carolina	274,563	393,944	668,507	206	3	34	37
Tennessee	756,836	245,881	1,002,717	148	13	11	24
Texas	154,034	58,558	212,592	39	3	3	6
Virginia	894,800	526,861	1,421,661	389	24	58	82
Total	6,222,418	3,442,238	9,664,656	2,140	87	301	388

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From the above table it will be seen that the number of centenarians in the Southern States, living at the time the census was taken, was 2,140, which, taken from the whole number in the United States, 2,555, will leave only 415 for the Northern States; or among 9,664,656 people in the Southern States there were 2,140 centenarians, and in a population of 13,527,220 in the Northern States, only 415 centenarians.

The census also reports that the whole number of centenarians who died in the United States between the first day of June, 1849, and the first day of June, 1850, was 481, of which 318 were colored and 163 white, or in the proportion of two to one. As the white population of the United States stood to the colored in the proportion of about five and a third to one, it follows from the death rate that there were about ten and two-thirds times as many colored centenarians as white according to population, which does not differ widely from the estimate previously deduced from the living centenarians, which was twelve to one. The table also shows that 388 of the 481 centenarians who died within the year preceding June 1, 1850, belonged to the Southern States, and of these 301 were colored and 87 white.

With such extraordinary data before us it seems to me we are only left the choice of one or the other of the following conclusions, viz: 1st, that the African race in this country, the majority of which were ignorant and in a state of servitude, living under hygienic conditions contrary to those usually accepted as most favorable to longevity, attain a greater age than any other people in the world; or, 2d, that the information furnished by the census statistics on this subject is imperfect, false and delusive. I have no hesitancy in adopting the latter conclusion. The information obtained by the census officer was necessarily gathered in a loose and hurried manner. Answers to inquiries about age were set down as given by the parties questioned without scrutiny or investigation.

A majority of these reputed centenarians were negresses or "Old Aunties," who really had no definite knowledge of their ages, and were incapable of keeping any record of their years. No registries were kept as to the date of their birth, nor any reliable data by which their ages could be reckoned. They were household servants who assisted in the rearing of two or three generations of

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children in the families to which they belonged, and hence, through traditional sources, acquired an uncertain or fictitious longevity.

We find in the census of 1850 the following special mention of those who attained an extraordinary age, viz: Alabama, five slaves, each aged 105 years; two 120. Arkansas, one white 105, and one slave 110. District of Columbia, one slave 103. Delaware, one free colored 100 and one 107. Georgia, one white 107, and three slaves 103, two 105, one 120 and one 131. Michigan, one white 103 and one 110. New Jersey, one colored 114 and one 109. New York, one white 102, one 103, one free colored 104, one 106, two 110 and one 113. North Carolina, one slave 120 and one Indian female 140. Texas, one slave 115.

Having shown the unreliability of our national mortuary statistics on this important question, I shall pass to other sources of evidence.

It is a remarkable fact that among the large number of reputed centenarians we can not find a single well authenticated instance, within the Christian era, of any person of royal birth or noble rank, related in history, whose age was a hundred years, and Thoms asserts that there has not been found a single instance among the modern peerage or baronetage whose tenure of life has reached this limit; yet it is admitted without question that these favored classes are long lived and attain a greater age than the common population. It is an admitted fact that classes of society in the enjoyment of prosperity outlive those who dwell in poverty and are committed to a life of perpetual drudgery and misery. Dr. Hawkins very truly asserts "that whenever a people enjoys a higher degree of prosperity, of national freedom and of moral dignity, there also will a greater number of individuals reap the full harvest of their years."

Again, the date of birth of those of noble rank and holding high positions in the State is usually recorded with accuracy, and becomes a part of history. Now, if from such trustworthy sources in regard to those whose circumstances and condition in life were most favorable to longevity, not a single centenarian has appeared in a period of two thousand years, we are certainly furnished with powerful reasons to call into question the extravagant stories about the longevity of persons of obscure birth, and to excite serious distrust as to the accuracy of all the public statistics that have been collected on the subject.

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We have another valuable source of evidence relating to the limit of human life which is consonant with that just given, viz., the records of permanent and long-established life insurance companies. From the twelve longest established life assurance companies of London we have the following results: At the Amicable, the oldest person on whom a policy was paid died at 97; Pelican, 97; Royal Exchange, 96; Equitable, 95; Albion, 95; Rock, 96; Imperial, 94; Union, 94; Atlas, 92; Sun, 92; London, 90.

The Amicable was established in 1670, during the reign of Queen Anne, and, as seen above, its records contain no example in this long period of a higher longevity than 97.

The records of the four old permanent life insurance companies of this country, though much younger than the London, add further testimony to the same effect. Since I commenced preparing this paper, a few weeks ago, I addressed letters to the New England Mutual Life Insurance Company, of Boston, the Mutual Life Insurance Company, of New York, the Connecticut Mutual Life Insurance Company, of Hartford, and the New York Life Insurance Company, soliciting answers to the two following questions, viz: 1. "What is the age of the oldest policy-holder of your company now living?" 2. "What was the age attained by the oldest member deceased?" To these questions I received from each company a prompt and courteous reply.

The New England Mutual reports, through its Secretary, Walter C. Wright, as follows, viz: "Our oldest policy-holder is now 89. He took his policy in 1847. The company commenced business in 1844. Two policy-holders have died at the age of 90, one of them last year."

The Connecticut Mutual answers: "The oldest living member of the company was born January 31, 1788," which would make him now a little over 92. "The oldest age attained by any deceased member was 90 years, 10 months 6 days."

From Dr. W. R. Gillette, of the Medical Department of the Mutual Life, of New York, I received a polite answer, regretting that it would be impossible to furnish accurate replies to my questions without great labor and time to run through their 90,000 policies and an extra clerical force; but he stated: "We have an impression that the greatest age attained by any of our policy-holders has been about 83 years."

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Dr. Henry Tuck, Medical Examiner of the New York Life Insurance Company, answers: "The oldest person holding a policy in this company is 88 years of age. The oldest person upon whom a death loss has been paid was not over 92."

Mr. W. H. Bailey, of the London Assurance Corporation, says he has met but one death in the hundredth year and three in the ninety-ninth.

History, in all its allusions to the age of rulers, statesmen, warriors, civilians, and other characters, shows that the term of natural life has not varied in a period of two thousand years, and that apparently the proportion of cases of extraordinary longevity among learned and distinguished men was as great in ancient times as now. Sophocles, it is said, lived to be 90; Diogenes, 90; Pyrrho, 90; Zeno, 98; Democritus, 99; and Hippocrates, the father of medicine, to 100 or over—ages that will compare favorably with the highest longevity of modern philosophers.

While the physiological limit of human life has been the same in all periods of history, and perhaps always will be the same, the average duration of life has been materially increased—an increase claimed during the present century of over ten per cent.

Passing from these general considerations, it may be profitable to glance at the different sources of evidence that have been mainly relied upon in determining the age of centenarians, and point out its defective character.

Thoms, in his investigations of reported centenarians, has arranged these sources under five different heads: "1. Baptismal certificates. 2. Tombstone inscriptions. 3. The number of the centenarian's descendants. 4. Recollections of centenarians. 5. Evidence of persons who knew centenarians as being very old when they themselves were very young."

It can be easily shown that this character of evidence is frequently unreliable and of but little value in deciding questionable cases, unless corroborated by other and stronger testimony. The burden of proof in all cases where an unusual or extraordinary longevity is claimed must rest upon those who affirm and not upon those who deny. The maxim of the civil law should rule: "*Ei incumbit probatio qui dicit non qui negat.*"

In baptismal certificates doubts must always arise as to whether they apply to the persons in question or to others bearing the same

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name. Sometimes two children born of the same parents receive the same Christian name, the first having died years before the birth of the second. The latter may live to a great age, pass from the recollection of early associates, and in course of time the baptismal certificate of the first child will be produced as evidence of its great longevity. Again, a baptismal certificate that belonged to some deceased person of a different family, but of the same name, may be used in like manner.

The evidence from tombstone inscriptions is open to the same defect. Thus, in the case of Mary Billinge, whose age was investigated by Thoms, the tombstone inscription from which her age was reckoned was found to apply to another person of the same name. This lady died in 1863, and was commonly believed to have lived to be one hundred and twelve years old, but the investigation proved that she was only ninety-one.

The same class of errors may arise in regard to registries that have been shown to exist in baptismal certificates. The registry of some one who died in early life, and passed from the recollection of men, may, three-fourths of a century afterwards, be taken to apply to some other aged person, and thus have ascribed to him a fictitious longevity.

Epitaphs and tombstone inscriptions can not be regarded as infallible. The experience of courts of justice proves that they can not be depended upon. Thus, the *Quarterly Review* relates the case of one Chave Priory, in Worcestershire, who was considered as having attained the patriarchal age of three hundred and nine years. An investigation of this case proved that a stupendous mistake had been made by the tombstone chiseler, in consequence of his peculiar method of enumeration. The person who had died was only thirty-nine years old, but the chiseler had made the figures 30, for thirty years, and added the figure 9 to the right, expressing, as he thought, 39 years, but really 309. In another case, where a person had died at fifty-three, the age was correctly chiseled upon the tombstone, but some wag afterwards added the figure one to the left, which made the inscription read 153. Time rolled on, and the wonder grew. The people of the vicinity, proud of such an example of longevity, took steps to perpetuate the fraud. They added to the original stone these words: "This stone was new-faced in 1771 to perpetuate the great age of the deceased."

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The recollections of reputed centenarians must be taken even with greater distrust than the species of evidence just presented; and the statements of those who had some personal acquaintance with them must be taken with many grains of allowance.

With this brief presentation of the different classes of evidence usually relied upon, especially in England, for determining the age of reputed centenarians, and its defective character pointed out, I shall present the results of recent investigations in respect to the age of the two most remarkable instances of longevity claimed in modern times, viz., Henry Jenkins and Thomas Parr.

According to report and general belief, Henry Jenkins lived to the extraordinary age of one hundred and sixty-nine years. The story has so long passed unchallenged as the truth that it may seem presumptuous to question it, and to attempt to dispute the fiction upon which it was founded. It has been mentioned before that Holler accepted the current belief, and upon this instance of great age, and a few others, based the opinion that the extraordinary life of man might reach two hundred years.

Jenkins, according to general belief, was born in 1501, but Thoms, after an exhaustive research, has failed to discover a particle of proof in support of the statement. About all that is really known of him is the statement of the parish register, that he died "a very old man, and was buried December 9, 1670."

The absurd and fictitious story of Jenkins' age originated from an undated letter, written by a Miss Ann Savile to Dr. Tancred Robinson, Fellow of the College of Physicians and Royal Society, and communicated by him and recorded in "The Philosophical Transactions of the Royal Society, Vol. XIX., in 1696." The story of Miss Savile seems to have been fully credited by Dr. Robinson, and he enlarged upon the original by asserting that Jenkins "had sworn in chancery, and other courts, to above one hundred and forty years of memory, and was often at the Assizes of York, whither he generally went on foot, and I have heard some of the country gentlemen affirm that he frequently swum in the rivers after he was past the age of one hundred years."

Miss Savile's report rests wholly upon an ingenious story invented by Jenkins, in answer to her interrogatories about his age, when she had met him one day in her sister's kitchen on an alms-begging

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expedition. He told her that he was about "162 or 163 years old; that he remembered Henry VIII.; that his recollection extended back to the battle of Flodden Field, and that being then some ten or twelve years old he was sent to North Allerton with a horse load of arrows, but that they sent a bigger boy from thence to the army with them," etc.

Hearing this story, Miss Savile's curiosity led her to look into an old chronicle about the house, in which she found that the battle of Flodden was fought 152 years before that time, or in 1513, which corresponded with Jenkins' story, and would make him then 162 or 163 years old. Miss Savile states further in her letter that Jenkins was very ignorant, could neither read nor write, and was a beggar. This fictitious and absurd story in the course of time became generally believed, and in 1740, nearly half a century after Jenkins' death, the people of Yorkshire erected an obelisk to his memory in Bolton churchyard, on which was inscribed his assumed age of 169 years. All that is really known of Jenkins is the brief statement of the parish register for Bolton-on-the-Swale, that he died "a very old man," and the presumption is he failed by several years of attaining the age of a centenarian.

THOMAS PARR.

I shall now devote a few moments to Thomas Parr, or "Old Parr," as he was familiarly called, whose age was reported to be, and believed for more than two hundred years to have been, one hundred and fifty-two years and nine months. The case of Parr has formed the basis of many speculations on longevity, and, until quite recently, was accepted as an indisputable case of extreme age. There seems to be no question about Parr being a veritable centenarian, though he fell short half a century of the age generally ascribed to him. According to report he was born in 1483 and died September, 1635. He married in 1563, being then eighty years old. In 1588, in his one hundred and fifth year, he did penance in a sheet for bastardy with one Catherine Milton. In 1595, when one hundred and twelve years old, his first wife (Jane Taylor) died, and in 1605, at the age of one hundred and twenty-two years, he married a second time.

A thorough investigation has failed to confirm a single statement

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of the above. The entire story appears to be fictitious. Thoms states, after his exhaustive search for evidence in this case, that "belief is not proof; and of anything having the semblance of proof or the slightest pretense to be called evidence of 'Old Parr' having lived one hundred and fifty-two years *not a particle is to be found.*"

Parr left no children, but it appears that some of those who accepted the fiction of his age for fact had sufficient fertility of imagination to supply him with a son—one worthy, too, of his ancient sire, for his age is put down at one hundred and thirteen years. His progeny of centenarian descendants did not cease with a son; they assigned to him also a grandson who lived to be one hundred and nine, a great grandson one hundred and twenty-four, and a granddaughter one hundred and three, all of which corresponds elegantly with the original story.

It will be found interesting reading to peruse the accounts of different writers concerning Parr's longevity, and the general gullibility with which the fiction of his age has been received. Taylor's life of Parr, under the caption of "The Very Old Man," is a long, pretentious poem, which relates in glowing numbers all the important incidents of his life, age, etc., as commonly believed.

The following lines in relation to the bastardy affair committed when Parr was 105 years old, and the peculiar punishment—the purgative penance—that he was compelled to submit to, that the demands of the law might be satisfied, will be found not uninteresting:

"Fair Katherine Milton was this beauty bright,
Fair like an angel, but in weight too light,
Whose fervent feature did inflame so far
The ardent fervor of old Thomas Parr,
That for law's satisfaction 'twas thought meet
He should be purged by standing in a sheet!
Which, aged he one hundred and five year,
In Alberburg's parish church did wear.
Should all that so offend such penance do,
Oh, what a price would linen rise unto!
All would be turned to sheets; our shirts and smocks,
Our table linen, very porter's frocks,
Would hardly escape transforming; but all's one,
He suffered, and his punishment is done."

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The report of Dr. Wm. Harvey on the autopsy of Parr, which was made by order of the king, and in the presence of several of the king's physicians, has been construed, perhaps, to imply more than it meant, and has contributed largely to strengthen and perpetuate the current notions in regard to this extraordinary example of longevity. This report will be found in the Sydenham Society's edition of the works of Dr. Harvey.

It does not appear clear, however, that Harvey gave full credence to the accepted belief of Parr's longevity, but, like most other physicians, in performing a similar duty, set down the reputed age of the deceased. The report commences thus: "Thomas Parr, a poor countryman, born near Winnington, in the county of Salop, died on the 14th of November, in the year of grace 1635, after having lived one hundred and fifty-two years and nine months, and survived nine princes."

The following peculiar statements are copied from the report:

"The organs of generation were healthy, the penis neither retracted nor extenuated, nor the scrotum filled with any serous infiltration, as happens so commonly among the decrepit; the testes, too, were sound and large; so that it seemed not improbable that the common report was true, viz., that he did public penance under a conviction for incontinence after he passed his hundredth year; and his wife, whom he had married as a widow in his hundred and twentieth year, did not deny that he had intercourse with her after the manner of other husbands with their wives, nor until about twelve years back had he ceased to embrace her frequently."

Harvey attributed the cause of death to the foul and insalubrious atmosphere of London, whither Parr had been transferred from his healthy country home at Salop. He says in the report: "The cause of death seemed fairly referable to a sudden change in the non-naturals, the chief-mischief being connected with the change of air, which, through the whole course of his life, had been inhaled of perfect purity — light, cool and mobile — whereby the precordia and lungs were more freely ventilated and cooled."

Several other peculiar matters are alluded to in the report; one that his memory became totally impaired as to the recollection of the early events of his life, he being only able to recollect those of the last few years; "nevertheless," it says, "he was accustomed,

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even in his 130th year, to engage lustily in every kind of agricultural labor, whereby he earned his bread, and he had even then the strength required to thrash the corn." In all of this it does not, however, appear that Harvey did more than repeat what was commonly reported about Parr.

I shall close this part of the subject by presenting a tabulated summary of the reputed and real ages of the most noted examples of centenarianism in England, according to the elaborate researches of Thoms; and, as I have before stated, it may be assumed that what has been found to be the limit of extraordinary life in England will apply to all other civilized countries:

NAME.	Reported Age.	Real Age—Remarks.
Henry Jenkins	169 y.	Less than 100.
Thomas Parr	152 y., 9 m.	100 to 102.
Countess of Desmond	140	100, about.
Mary Billinge	112	91.
Jonathan Reeves	104	80.
Mary Downtown	106	100.
Joshua Miller	111	90.
Matthew, or Mandet Baden	106¼	96.
Thomas Geeran	106	85 or less.
John Pratt	106	Not a particle of evidence, perhaps 85 or 90.
George Fletcher	108	92.
William Webb	105	95.
George Brewer	106	98.
Robert Howlison	103	Not proven.
Robert Bowman	118 or 119	No evidence.
Frederick Lahrbush	106	Barefaced pretension.
Richard Purser	112	80 or 85.
William Bennet	105	95.
Mary Hicks	104	97.
Richard Taylor, proved to be William Taylor	100	97.

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Veritable ages, according to best evidence:

Name.	Age.
Mrs. Williams, of Brideshead	102 years.
William Plank	100 years.
Jacob William Luning	103 years.
Catharine Duncombe Shafto	101 years.

The following are placed in the list of doubtful cases:

Name.	Age.
Mrs. Martha Lawrence	103 years, 6 months, 7 days.
Sally Clark	Claimed to be 106. Evidence unsatisfactory; perhaps several years younger.
Peggy Longmire	103 years, 6 weeks. Doubtful.
Mrs. Elizabeth Puckle	106. Evidence wholly inconclusive. Her name probably confounded with a second and younger Elizabeth.

Hence it appears from the best evidence hitherto produced, and the rigid investigations made in the most noted examples of longevity in England, that none of them have been proved, to any reasonable certainty, to have lived beyond the age of 103 years, or if we accept one of the doubtful cases as reliable, to more than a few months over 103 years.

From the foregoing discussion of the subject of longevity and examination of the facts and evidence, I think the following conclusions may be safely stated:

1. That science holds out to man the possibilities of one hundred years of life.

2. That one hundred years is the physiological limit, and that the laws of our organization will not permit a material extension of life beyond this limit.

3. That most of the public statistics heretofore collected in relation to centenarians, and current reports of persons living beyond a hundred years, are inaccurate and unreliable.

4. That there has been no incontestible proof yet produced in any country of an instance of longevity exceeding one hundred

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and six years, within the Christian era, and that we may safely conclude that it is barely possible for human existence to reach beyond this extreme limit.

A great many speculative notions have been promulgated from time to time in regard to modes of living by which life might be extended to or beyond a hundred years. Some of these were Utopian theories in regard to diet which are inconsistent with the deductions of modern physiology. In most of these attempts one or two examples of persons who had attained a great age have been set up as models, and their dietary, habits, etc., taken as the *sine qua non* of longevity.

Flourens devotes a whole chapter of his valuable work to Conaro, an Italian centenarian born at Venice, and presents in a full manner his habits, dietary and methods of life, and Conaro's personal opinion when at an advanced age in regard to the influence of will power in prolonging life. Flourens says that "Conaro was a frail old man who, by dint of care, diet and moderation, and by making *living* the great object of his life, attained the age of upwards of a hundred years." Conaro inherited a feeble constitution, and was dissolute in his habits until he was thirty-five years old, when he was informed by his physicians that he had but two years longer to live. Alarmed at this announcement, he suddenly abandoned his dissipated habits, and adopted the most rigid sobriety. He lived fifty consecutive years upon twelve ounces of solid food and fourteen ounces of wine (such as they then had in Italy) per diem, during which time, it is said, he was never ill. His diet was taken from two to four times a day, and varied from time to time to embrace substantially the essential elements of food according to the teachings of physiology. His dietary embraced such articles as bread, soup, eggs, meat, partridges, etc. Conaro had very feeble digestive powers, and it seems that this limited quantity of food was all that his assimilative organs would appropriate. After living fifty years upon this scanty dietary, he was persuaded by his friends to enlarge the quantity, which he did to fourteen ounces of solid food and sixteen ounces of wine per diem. The consequences of this change of regimen I will give in his own language: "I got angry at trifles, and no one could live with me. At the end of twelve days I had a violent pain in my stomach, which continued twenty-four hours.

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It is unnecessary to ask if they despaired of my life, or if they repented of the advice they had given me."

Flourens does not fall into the error of drawing general conclusions from this limited dietary, for it is evident that a muscular laboring man would half starve upon such a limited supply, and be unable to put forth much physical exertion. But it indicates clearly enough that the equable line of health lies between a scanty and defective dietary and over-nutrition. Conaro was something of a philosopher, and claimed that will power exercised a potent influence in prolonging life, and, in accordance with this belief, he made living the great business of his life. He suppressed grief and anxiety, allowed nothing to disturb his mental composure, and directed all the forces and energies of life to its own preservation. This is certainly true philosophy, for there is more wisdom and honor in adding ten or twenty years to a happy existence than burning out the taper of life prematurely by over indulgence in luxuries, by the cares and anxieties of greed and wealth, and the high pressure of mental action now so frequently manifested in business pursuits.

Conaro made it a rule to avoid as much as possible extremes of heat and cold, exposure to violent winds and extreme heat of the sun. He also avoided violent exercise and living in places where the air was impure. According to report, he determined to live in spite of his constitution and all prognostications as to his inability to live long, and took a secret pleasure in struggling with nature and overcoming her. He constructed his house so as to afford complete protection against heat and cold. He took delight in conversing with learned men and the acquisition of new ideas. He composed amusing plays at the age of eighty-three, and attributed his capacity to do so to his temperate life. He declared himself to be as happy, healthy and merry at ninety-five as he was at twenty-five. He had a fixed determination to live long, and said, "I am certain of living more than a hundred years." He wrote a book of four discourses, the first when he was eighty-three, the second at eighty-six, the third at ninety-one, and the fourth at ninety-five. He declared that the mind matured as the body grows old, just as the grain ripens when the stock becomes seared with yellow. He was domestically inclined, and had a family of eleven children, to whom he was fondly attached. He had a great pride in living, and

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spoke of his beautiful life as a great victory which he had gained. His closing advice in his fourth discourse was, "Live, live long."

I have presented this brief synopsis of Conaro's method of life and his personal opinions because it embraces some of the chief essentials of health and longevity, viz., sobriety, equanimity of mind, rational intellectual exercise and enjoyment, avoidance of extreme physical exertion, impure air, extremes of heat and cold and exposure to winds, besides including that mighty conservative power, too little understood—*the influence* the moral exercises *over the physical.*

M. Reveille Parise defines hygiene to be the "art of estimating the forces, of exciting and sustaining them so as to preserve life as much as possible, as well as possible, and as long as possible." He has given the world the four following rules, which he thinks embraces all implied in the subject:

1. To know how to be old; and quotes Rochefoucauld, who said there were but "few men who knew how to be old."
2. To know one's self well.
3. To conform to regular and good habits.
4. To attack every malady at its source.

Upon the assumption that these rules should be strictly observed, and all that appertains to them in regard to diet, regimen, exercise, temperature, etc., he asks the question, "How long will a man live?" and answers by saying, "that he will not live more than his life, but he will live all of his life."

Dr. Richardson, of London, in his recent book on health and life, expresses views quite consonant with those just advanced. He says, "health, national and individual, is something to be acquired by learning, and that it does not come to man by any royal road, or a gift that asks no labor before it is bestowed." Accepting the maxim that national health is national wealth, and admitting the controlling influences of the moral and intellectual over the physical, the magic power of knowledge over all things, and the victories that may be achieved by will-power as exemplified in Conaro's case, we can see a wide field opening and ever expanding before us, in which the medical profession may prove of the highest importance to the State, not only in curing diseases, but also by pointing out the way to live. It may also in time be able to so impress the

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public mind and educators of the country as to make the study of the laws of life and health an obligatory part of education, and thus, through the influence and observance of this most valuable knowledge, extend materially the average period of life and increase the number whose lives may reach the full limit of their years. National health is not only national wealth, but it is the chief bulwark of national power. If it is the first duty of a State to look to its means of defense, it is scarcely a less obligatory duty to consider the proper means for promoting the welfare and preserving the lives of its defenders. Public hygiene and sanitary measures to prevent the rise and spread of disease, is a subject which is gradually encroaching upon the public mind, though it has not yet to an obtrusive extent.

It might appear that the advocacy of such important measures for the public good is not the special duty of the physician, and is antagonistic to his interests, but the history of the past will not allow such an interpretation to be made. The medical profession will always be found occupying advance ground on this subject, and physicians, by education and modes of thought, are certainly those best qualified to comprehend it and furnish advisory information.

It seems to be conceded that through the knowledge derived from medical science that the average tenure of human life, in civilized countries, has been materially prolonged during this and the preceding century. The mortality of London in 1700 is given at one in every 25 of the population, or 40 persons to the 1,000; in 1801 it was 1 in 38, or 26 to the 1,000; from 1841 to 1850 it was 1 in 40, or 25 to the 1,000; from 1861 to 1870, 1 in 42, or 24 to the 1,000, and at this rate it would, before the close of the present century, be 1 in 50, or 20 to the 1,000. The mortality statistics of the United States, according to the census of 1860, show a death-rate of 1 in 45 or 46, or about 22 to the 1,000. There is but little reason to doubt that the average ratio of mortality in this country can be materially reduced below this point. The number of preventable deaths occurring annually of those attacked with disease has been estimated as high as 200,000; but these bear only a small proportion to the whole number of cases of disease that might be prevented by a proper regard to the laws of health. We see this clearly manifested in the comparative longevity of the Jews in the

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leading commercial cities of the world. In Frankfort the average tenure of life, in the whole population, has been estimated at thirty-seven years and seven months; average life of the Jewish population, forty-eight years and nine months; average, after excluding the Jews, thirty-six years and eleven months. Deaths among the Jews for the first five years, 12.9 per cent.; other classes, 24.1 per cent. Proportion of Jews that reached manhood and womanhood, 54 per cent.; others, 38.1 per cent. Among the Jews, 24.7 per cent. attained the age of ninety years; others, 13.4 per cent. One-fourth part of the whole Jewish population lived twenty-eight years and three months; one-fourth of all other classes, six years and eleven months. One-half of all the Jews lived to be fifty-three, and one-half of all others thirty-six years. One-fourth of the Jews attained the age of seventy, and one-fourth of all others fifty-nine years and ten months. Legoyt's statistics of Prussia give the same results. He says that in Prussia the number of children among the Jews that die just before, at or after birth, is one in 97.75, and in the other classes one in 44.86. The average longevity of women is greater than men. The ratio of Jewish women that exceed the age of ninety is to men as 11 to 5, and those from eighty to ninety are to men as 53 to 22.

How are we to explain this remarkable discrepancy between the longevity of the Jews and Gentiles living in the same cities? It certainly can not be attributed to any natural superiority of constitution or greater tenacity of life in the former over the latter. We must, I think, attribute it to a better knowledge and observance of the laws of health. Perhaps it is due in a measure to the religious observance of the time-honored hygienic code of Moses, the great law-giver of Leviticus, which must still be held as a valuable legacy to mankind.

Modern civilization has exercised a powerful influence in extending the period of human life. This has been effected by lifting man out of a state of barbarism, providing him with better diet, clothing and habitations, giving him better control over the elements of nature, better knowledge of diseases and better remedies for curing them, and substituting peace and its conservative arts in the place of universal war and its depopulating and disturbing tendencies.

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But while the blessings and advantages of civilization have been clearly manifested, it has borne with it certain vices, evils and excrescences, which tend to pollute the stream of humanity and detract from its full power in lengthening the term of existence. Dr. Richardson says: "When civilization gives to civil man more privileges than he deserves or requires, and perverts his freedom, forces him to extremes of labor, promotes premature marriages and excessive growth of population, the civilization lapses back into practical barbarism, and nature, maintaining her unswerving and wise course, hurries her way, with death on her wings." We see these bad results manifested in the so-called social evil, in the exhaustive requirements of factory labor, in various mechanical pursuits, in the incessant and unremunerative toil of seamstresses, and the neurasthenia resulting from the incessant strain incident to business pursuits. The deplorable effects of this high pressure of mental action have been so frequently manifested of late as to become regarded by some as a new disease, and characterized as one of the accompaniments of modern civilization.

Among the evils or mistakes of civilization not the least is that of forced education, by which the minds of young children are crammed with a multiplicity of studies which lie beyond the proper scope of their faculties, and which too often result in both mental and physical exhaustion as well as permanent stunting of body and impairment of intellect. It is frequently manifested as a result of competitive examinations for the highest position in classes, and for prizes offered as the reward for proficiency in knowledge. In a large proportion of cases the victor is not he who possesses the best intellectual faculties but the greatest amount of physical endurance.

Frivolous and depraved literature may be ranked among the evils of modern times, and is calculated to exercise a baneful influence upon the youthful mind by glossing over the realities of life with false colors and infusing passions that belong to another age. In this way infantile life is merged into youth, and its natural pleasures lost; youth is hurried into manhood, and its natural passions and pleasures hurried into the latter. In the same way manhood usurps the period of old age, which comes at forty or fifty, and the man is ready to die.

The conditions most essential to longevity are those which have

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been presented in the typical case of Conaro, and in the theoretical rules of Parise. "To know how to be old," and a determination to live out the full measure of years, have been shown to be powerful aids to longevity. Conformity to regular and good habits, temperance, avoidance of excesses in food and drink, and over-exertion, both physical and mental, rank among the most common and apparent requirements. As air and water are prime elements of food, too much care can not be taken to guard against impurities. A host of destructive diseases find their admission to the system through these indispensable agents. With all our advancements in science, it can not be claimed that the art of ventilating houses so that they may be supplied with pure and fresh air of proper temperature has yet attained perfection. Ill-ventilated and foul and badly tempered chambers are the abodes of disease and death.

Physiology and the common experience and instinct of mankind have settled the question as to what man may eat. All Utopian theories relating to diet have been completely exploded. The food of man must include air, water, nitrogenous and carbonaceous substances and certain inorganic mineral elements and salts; such indeed as form the proximate elements of the tissues and anatomical fluids of the body. It is not true, as has been frequently asserted, that the people of any country exist exclusively upon a single article of diet. The people of India undoubtedly live largely upon rice, but they also partake of other articles of food.

Excessive labor and drudgery, or over-use of the muscles in feats of strength, tend uniformly to the shortening of life. Pugilists, athletes and acrobats seldom attain a great age. Idleness or a prolonged state of physical inactivity is unfavorable to longevity, but there are twenty persons who die prematurely from over-labor where one dies from a too limited amount of exercise. Since man must live by the "sweat of his brow" his vital forces are best conserved by a moderate degree of activity. Intellectual pursuits in science, literature or the professions, are conducive to longevity. Natural philosophers, judges and chancellors at law, and learned divines, rank among the longest lived. Physicians, on account of the exposure and toils incident to their profession, exhibit a shorter average of years. It is only the imprudent and excessive strain of

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mental labor—the friction, if we may so express it—that produces injurious effects. One of the most productive sources of disease in this climate is attributable to oscillations of temperature. It is claimed by some that these frequent and extreme variations of temperature are the origin of our malarious disorders, instead of a specific emanation from the soil. Whether this theory of primary curation is correct or not, there seems to be no question that it plays an important part as an excitant. Protection against these oscillations of temperature is important as a prophylaxis against malarious attacks. Cold waves of air are as destructive to human life as storms and hurricanes are to trees. I have never known in the north-western part of this State, where I formerly resided, a wave of cold air to sweep over the country without destruction to life, especially among the aged and debilitated. It has been estimated that if a wave of cold air will kill one person of thirty years of age, it will kill two of thirty-nine, four of forty-eight, eight of fifty-seven, sixteen of sixty-six, thirty-two of seventy-five, sixty of eighty-four, and at a hundred it is presumed all would perish. Between ninety and one hundred the vital forces are nearly exhausted and the tendencies to dissolution largely increased. Hence the avoidance of storms and damp and protection against waves of cold air and oscillations of temperature must be ranked among the measures most essential to the preservation of life. This protection must come through the exercise of personal care, proper clothing, and regard to the construction of buildings, so as to secure an equable temperature in winter, and diminish the depressing effects of solar heat in the hot months.

Persons of large frame and unusual muscular development possess no greater claims in favor of longevity than those of light and slender form. Longevity is connected with a constitutional facility or acquired ability to treat all care, anxieties and misfortunes in a philosophic manner, so that they shall not be permitted to prey upon the vital energies; to guard against undue excitement of passions and pleasures, and the ability to take repose when it is necessary and to sleep soundly and abundantly. This has more to do with the question than family record, athletic frame or powers of physical endurance. As most all persons entertain an expectancy of old age, live in anticipation of it, and make more or less prepar-

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ation for it, it is of paramount importance that they should understand those vital laws and hygienic conditions upon which its conservation depends.

Time is of more value to man than anything else, and the closing years have often been productive of the most important results and been crowned with the greatest happiness. The living principle in man increases to the fiftieth year and then declines, while the thinking principle may go on expanding to seventy-five or eighty-five. Fontanelle, the centenarian philosopher, when asked which twenty years of his life he most regretted, answered that he had little to regret, but "the age he had been most happy was from forty-five to seventy-five."

As each age of life has its own peculiarities and adaptations, it likewise has in store its peculiar enjoyments and advantages. Since the mind matures as the physical energies decline, advanced life is the period for calm reflection, in which the treasured facts and accumulated knowledge of former years is drawn upon and deductions fraught with wisdom and tempered with experience may come forth to govern and direct mankind.

Early life is the period when the perceptive faculties are most active, and in early manhood many valuable discoveries in science have been due to keen observation and quick thought, but quite as much, or more, in the way of important discovery and invention has resulted from the more profound thought of advanced age. As an example of the first, we may refer to Galileo, who, at the early age of eighteen or twenty, discovered the equal duration of the oscillations of the pendulum. On the other hand, we may refer to Harvey, who, at the age of fifty, published his great work on the circulation of the blood; Buffon, at seventy-one, the publication of his greatest work, "The Epochs of Nature." As an example in our country we may proudly turn to Chancellor Kent. We are indebted to Kent's Commentaries, an authority almost supreme in our courts, and the basis of our system of jurisprudence, to an absurd provision in the constitution of New York, which retired its judges when they arrived at the age of sixty years. Kent, too old to hold the office of Chancellor, was still young enough after sixty to produce a work that has immortalized his name and placed him in the front rank of the brightest legal minds the world has ever produced.

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TUMORS OF THE ANTERIOR WALL OF THE VAGINA.

JOSEPH R. BECK, M. D., FORT WAYNE, IND.

The gynecological literature of the world seems to be sadly deficient in statistical records of some diseases which fall strictly within its limits, notably among which is that of tumors of the anterior wall of the vagina. I have repeatedly inquired of myself and others, whether this absence of important information is not due to an apathy on the part of clinical observers in recording their experience rather than to the absolute rarity of this class of cases. For myself, while free to admit that my attention has only recently been directed to this disease in the locality mentioned, I am fully persuaded, by my experience, that the number of this class of cases is by no means as small as the literature of the subject would seem to indicate; and it is solely with a view of contributing my mite to the statistics of this subject that I am disposed to trespass upon the time of the society by the presentation of a brief report of two recent cases of this nature, which came under my observation in consulting practice.

The history of the first case is a most lamentable one, and, judging from its unfortunate termination, is such a history as I will never again permit to be made in any future case of the kind in which I may be concerned. Briefly stated, the facts are as follows: Mrs. Henry C. F., resident at No. 408 East Washington street, this city, aged about 28 years. The patient was a rather pronounced brunette; of a lively disposition; somewhat undersized, but with a

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fine *physique*, and had never suffered from any illness worth mentioning. She was of German extraction; had been married about seven years, and had borne four children, all of whom, except the product of the last pregnancy, are living and in good health.

On the 23d of March, 1877, being somewhat alarmed by the occurrence of some hemorrhage from her vagina, her family physician, Dr. G. L. Bruebach, of this city, was sent for. He found, upon inquiry, that she was then probably advanced to nearly the third month of gestation, and he at once instituted measures to check the bleeding, which was clearly from the uterine cavity. Various modes of treatment were tried by him between the date mentioned and April 1, and finally, as all the plans employed had been equally ineffectual in causing the arrest of the hemorrhage, he induced an abortion by rupturing the membranes, on April 2, with the full expectation of thus removing the active cause of the bleeding. In this, however, he was doomed to be disappointed, inasmuch as she continued to bleed slightly, although almost continuously, from that time, in spite of the most strenuous efforts on his part to discover the source of the leakage and stop it.

Dr. Bruebach first noticed the vaginal tumor on September 12, 1877, and on the following day I saw the case, in consultation with him. From my case-book for 1877 I extract the following particulars of the case as it presented itself at that examination:

"Number of abortions, one; time since the last pregnancy, one and one-half years; age at which menstruation appeared, fifteen; duration of present illness, about six months; symptoms during its course, mainly a painless, but almost a continuous hemorrhage; an abortion; a subsequent continuation of the bleeding; the development of a tumor upon the anterior wall of the vagina, and a complete cessation of the ability to empty the bladder except by the use of the catheter; supposed cause of this trouble, unknown; menstruation has never been abnormal; there has never been any leucorrhea, and the case is especially remarkable for the complete immunity from pain which has characterized its entire progress; locomotion is almost entirely suspended, and the patient spends nearly all her time in bed.

"Of other symptoms there are only a general bloodlessness and an icteroid hue of the skin noticeable, the former condition very well

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marked and the latter only fairly perceptible, but the general physical debility is painfully apparent. Of physical signs, the touch reveals an otherwise moderately capacious vagina, filled with a spherical, perfectly smooth tumor; the speculum (Sims') demonstrates its attachment to the anterior walls of the vagina; the os uteri could not be exposed to ocular observation, and could barely be reached by the finger slipped past the posterior surface of the tumor. Nothing of an abnormal or pathological character could be discovered in or about the latter. The tumor is as large as a large sized orange and shows two points of ulceration upon its anterior inferior aspect. It is attached to the anterior wall of the vagina by a base which might aptly be compared in imagination to an orange with a quarter of its bulk sliced away and its remaining three-quarters attached to a base at the line of amputation. Its color is a vivid but deep purple; its investing covering is of mucous membrane, and, as far as the touch can determine, it is of a dense fibrous character. It impedes the evacuation of the bladder by its mechanical pressure upon the urethra, and the catheter has to be resorted to each time that the viscus is emptied. Upon applying a probe to the orifices in the lower surface of the tumor we are rewarded by a discharge of venous blood. The anterior two and a half centimeters, and the posterior seven and a half centimeters of the anterior walls of the vagina, are in no wise implicated in the adventitious growth, but the base of the tumor occupies a space in length of fully seven and a half centimeters between these limits.

"Diagnosis.—A malignant tumor of the anterior walls of the vagina, in which the fibrous element predominates to such an extent as to properly enable its classification as scirrhous.

"Prognosis.—A fatal issue, in all probability a question of time, which is to be determined as to length by the endurance of the patient.

"Treatment.—We are agreed as to the propriety of the removal of the tumor, and as to the impropriety of its removal with the knife for fear of a terrific hemorrhage. Dr. Bruebach advocates the employment of the ecraseur for this purpose, to which I object for fear of dragging in the urethra, and thus creating an immense urethro-vaginal, and possibly a vesico-vaginal fistula. I suggested its removal by the wire of the galvano-cautery; but Dr. Bruebach,

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for reasons not satisfactory to me, declined to entertain this suggestion, and I therefore withdrew from the case."

Thus much from the record of the case at the time of my first examination. Having withdrawn from the case, as stated, I did not again see the patient during her life. In spite of all treatment she slowly but steadily sank, and finally died of pyemia on March 13, 1878, about one year from the time when she first noticed the hemorrhage from the vagina. An autopsy was held the day following her death, for the details of which I again have recourse to my notes, which are as follows:

"March 14, 1878—Autopsy of Mrs. Henry C. F——. Present, Drs. Bruebach, Whery, Purman, and myself. Cadaveric section by the former. Rigor mortis well marked, and body quite emaciated, with a deep yellow tint of the skin. Abdominal and genital organs examined. Removed a section of the pubes, vagina entire, and the uterus, with the tubes and ovaries. Vagina was in a normal condition, except as to the location of the tumor, which was very much broken down and shredded away by suppuration, more than four-fifths of its bulk having disappeared. The tubes and ovaries were entirely normal. The uterus normal, except that it contained a fibroid tumor of the fundus, about as large as an English walnut. Upon incising the capsule of this fibroid, the latter was readily turned out. No ulceration of this tumor had occurred. Proceeding upward, the liver was found to contain two small abscesses, the spleen had been reduced to a mushy, pulpy mass, and each lung had several abscesses, confirming their pyemic origin. Further examination was then suspended."

I prepared the vagina and uterus separately, and they have been presented to the Allen County Medical Society, in whose possession they are at present. The vaginal tumor in this case was evidently cancerous in its nature, although no microscopical examination to demonstrate this fact was made. I still adhere to the opinion that the early removal of this tumor by means of the galvano-cautery would certainly have postponed the fatal issue of the case, and might even have been instrumental in indefinitely extending the lease of life for the patient.

The second case presents some striking characteristics, and has scarcely a point in common with the one just given. In this in-

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stance the tumor on the anterior wall of the vagina was, in all probability, a secondary manifestation of a medullary or encephaloid cancer of the uterus. The question of the origin of the vaginal tumor, whether due to autogenetic infection or to the diathesis of the patient, is one which it is only fair to say will be exceedingly difficult to satisfactorily answer. For the detailed history of this case I am indebted to the attending physician, Dr. J. S. Gregg, of this city. I was only advised with once prior to the death of the patient, and did not see her during her lifetime. The history given me by Dr. G. is from notes of the case by him, and is as follows:

"Mrs. Sarah Mercer, of English birth, aged seventy years, resident at No. 159 East Lewis street, this city."

"According to the statements of the patient and her husband, she began, in 1871, to experience a lancinating pain in the pelvic region, seemingly generally diffused and not especially referable to any one locality. In 1872, about a year after she first began to notice this pain, and probably ten years or more subsequent to her arrival at the menopause, she became cognizant of an offensive discharge from her vagina, which flow varied considerably in character, being at times tinged with blood, while at other times it appeared to be of a watery or sero-purulent nature. This discharge was attended by continuous and increasing pain, and was shortly followed by a serious impairment of her general health. The patient at this time was a resident of Jones county, Iowa, and had constantly declined to submit herself to any medical treatment; and, indeed, she did not finally seek advice until August, 1878, when she was absolutely forced to do so on account of a retention of urine, which had been added to her other troubles. Her Iowa physician, after catheterizing her twice daily for a number of days, instructed her how to use the catheter for herself; and, after its employment for some days longer, the obstruction to the passage of the urine seemed to have entirely subsided.

"After a great deal of persuasion, both by himself and her friends, her physician was permitted to make a digital examination of the vagina, and he then discovered a tumor on the anterior wall of the same, situated just above the meatus urinarius. He at once suggested surgical interference, but was met by a most decided refusal of his advice by the patient. From that time her health, which

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had been gradually failing, began to decline very rapidly, and her suffering was increased in a proportionate ratio. In September, 1878, the patient was visited by her married daughter, who resided in this city, and shortly thereafter she was persuaded to remove here for better nursing, and she remained here until her decease.

"During the winter of 1878 and 1879 her suffering increased in intensity; the vaginal discharge became much more profuse, and she became subject to incontinence of urine, and on March 9, 1879, a complete retention again occurred. On the morning of the date last mentioned I saw the patient for the first time, and with the catheter removed one and a half liters of urine. For a few days subsequent to this I catheterized her three times in each twenty-four hours, and from then until March 24, twice per day. For some time after I first saw her she had some dribbling of the urine in the intervals between the employment of the catheter, but by the last mentioned date this had ceased, and she could empty her bladder without assistance, and this condition of things remained until her death.

"At the time of my first visit I discovered a tumor on the anterior wall of the vagina, commencing at a point 2½ centimeters above the meatus urinarius, and extending upward along the vaginal wall, as well as I could determine by a digital examination, something more than 5 centimeters and perhaps a trifle less equilaterally. This tumor was oval in shape, rather firm in its texture, immovable upon its base, somewhat roughened on its surface, and inclined to bleed upon the slightest provocation. It did not seem to be in a state of suppuration, was entirely disconnected from the uterus, and the latter organ was so high up as to be entirely beyond the ken of a digital examination, while one with the speculum was at no time permitted. From all the symptoms of the case, used as premises, I deduced the diagnosis that the uterus was, in all probability, the seat of a very extensive malignant deposit, evidently long ago entered upon the stage of ulceration.

"Generally speaking, she was extremely weak, very anemic, emaciated to almost the last degree, the cachetic appearance was well marked in her face, and her appetite and digestion had nearly ceased to exist. During the last few weeks of her life the bladder became very irritable, and the patient was tormented by a constant

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desire to urinate, which was followed by the occasional passage of a tablespoonful or two of urine, but rarely more; the pain was constant, most agonizing in character, and was only slightly relieved by the very free exhibition of morphia. For the rest, the hemorrhage was controlled by astringent injections, and the rapidly increasing debility was hopelessly combatted by the free administration of quinia, iron and other tonics. Of course no treatment was of any avail, and she quietly sank, May 22, 1879."

This statement comprises the salient points in the history of the case, which Dr. Gregg took a good deal of pains to acquire and commit to paper. I had been consulted by Dr. G. sometime in April, 1879, as to the advisability of operative interference, and had suggested that nothing but a sustaining treatment was indicated by the history of the case; and my prognosis was that of a fatal termination in a very short time. From my notes of the post mortem examination I extract the following essential particulars:

"Autopsy upon the body of Mrs. Sarah M——, May 22, 1879. Present, Dr. J. S. Gregg and myself; cadaveric section by the former: Rigor mortis well marked, and emaciation extreme; seven and a half centimeters of the pubis removed, and the abdominal cavity opened; the uterus and appendages, the bladder and the vagina were removed entire. The uterus was situated high up out of the pelvis. Upon longitudinal anterior section the uterine cavity measured twelve and a half centimeters from the internal os to the fundus, and ten centimeters in its widest diameter. The external os and cervix were perfectly normal, while all the remainder of the organ was one immense mass of suppuration and cancerous tissue. The tubes were no longer pervious, and the ovaries were atrophied to the size of small peas, but there were no abnormal features in either. The vagina was very much elongated, measuring nearly twenty and a half centimeters from the labia majora to the os uteri. Both the anterior and posterior culs de sac were obliterated. It seemed likely, judging from the exact limitation of the original tumor in the uterus, that the offending mass had in the outset been a fibroid, and had passed into a malignant degeneration, involving the whole of the upper segment of the uterus, but leaving the lower segment and the major portion of the vagina untouched. Above and behind, the uterus

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was attached to the transverse colon, and below and behind to the rectum, in both instances by bands of exudation tissue, and its whole peritoneal surface was covered with nodules, ranging in size from a small pea to a filbert. The vagina, except as to its extreme length and the location of the tumor upon its anterior wall, was entirely normal. The vaginal tumor was found to have been accurately described, both as to size and character, by the diagnosis made by Dr. Gregg. The bladder was exceedingly small, very thick, totally inelastic and not distensible, and the whole of its neck and a large portion of its posterior wall were infiltrated in a manner going to show that the vaginal tumor was rapidly extending itself into this viscus. The examination was not carried any further.

There are many rare, instructive and interesting features involved in the discussion of this case, but as the facts have been given somewhat at length I will not even attempt to enumerate these points.

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A CASE OF OVARIOTOMY

WITH RECOVERY.

WILLIAM LOMAX, M. D., MARION, IND.

On the 30th day of September, 1877, I was called to examine Mrs. P. Y., wife of a farmer, aged forty-six, and mother of seven children, the youngest of which was six years old. She menstruated regularly, and the general health was fair, excepting a sense of weight and depression in the pelvis, accompanied by leucorrhea and frequent dysuria, with the ordinary uneasiness and inconveniences attending displacements and subinvolutions of the uterus. The uterus was found depressed in the vagina, somewhat engorged, but readily movable. Upon the left side, occupying the space between the uterus and the pelvis, a thickening of the tissues was observed, apparently loosely attached to the pelvis. Any movement of this was felt to move the uterus. But movement of the uterus did not appear to affect the tumefaction.

A prescription was made, but they never called for the medicines; and I heard nothing further of the case until the 6th of March, 1879, when I was called to see the woman on account of an abdominal tumefaction equaling that at full term of utero-gestation.

The menses were irregular, returning at intervals of three or four months, and variable in the amount of the discharge, as well as duration of the period. She informed me that something over a year ago, while reduced to a feeble and emaciated condition by a protracted bronchitis, she discovered a tumor apparently protrud-

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ing from beneath the right hypochondrium, and extending nearly to the umbilicus; that it was solid, painless and slightly movable, and had grown steadily and rapidly until attaining its present dimensions. I found it more or less lobulated, solid to the feel, not highly sensitive to pressure, admitting of some movement, but more firmly bound in the region of the left ovary than at any other point. There was a very distinct fissure in the right side, ranging diagonally forward and downward from the back and upper part of the tumor, apparently dividing it into superior and inferior lobes. The lower extremity of the tumor dipped down into the left side of the superior strait of the pelvis, and was felt to move in response to any movements given the body of the tumor by the hand placed upon it externally. The uterus could be readily moved upon the point of the index without communicating any perceivable movement to the tumor, showing some loose connection between the two.

My investigation brought me to the conclusion that this was an ovarian tumor, or at least a tumor having its origin in the vicinity of the left ovary, and that it would be amenable only to an operation for its extirpation. This opinion was fully communicated to the parties at the time. But they were not prepared to give their consent to such radical and formidable therapeutics on so brief opportunities for reflection and consultation. Anxious, myself, to avoid, if possible, the hazardous capital operation to which the prominent features of the case so strongly pointed, I was not very arbitrary in enforcing my views, and, yielding to the pressure of circumstances, consented to exhaust every means that could promise the least benefit, provided the diagnosis should prove erroneous. She was, therefore, put upon a treatment of strychnia and ergot internally, while the tumefaction, externally, was saturated with iodine dissolved in glycerine, and the abdomen kept enveloped in cotton batting.

This course was dilgently pursued until the following August. For a time her strength improved, and she flattered herself that the volume of the growth was diminishing; but at the end of five months it was evident that the tumor was increasing in size. In the meantime my brother, Dr. C. Lomax, of Marion, and Dr. J. L. Dicken, of Wabash, had seen and carefully examined the case, and fully concurred in opinion with me as to the character of the tumor,

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and also in the propriety of its extirpation, and the woman had partially consented to submit to the operation, but, as it was now in the middle of our annual malarial visitation, it was deferred to a more salubrious atmospheric condition.

In September she was attacked with an irregular, low form of remitting fever, which, under the usual treatment, passed away in a few weeks, but left her more debilitated and uncomfortable than before.

Early in November they moved to Marion temporarily for the convenience of an operation and its after treatment. We again re-repeated our examination as thoroughly and carefully as we could, which fully assured the correctness of our previous diagnosis; and the unmistakable evidences of the progressive ravages of the disease exhibited in the increasing anemia, emaciation and debility, thinning of the neck and jaws, with a haggard, anxious expression of countenance, strongly admonished us of the imperative demand for an early operation. With this purpose she was put on a preparatory regimen best suited to sustain the vital energies and enable her to bear the shock of the proposed operation and recuperate from the severe depressing contingencies to which those energies would unavoidably be subjected. Some two weeks after this she was more feeble and uncomfortable. There were large accumulations of gas in her bowels, producing painful distention, tenderness and soreness of the entire abdomen. This condition would have been very unfavorable and embarrassing to the operation, as it would have been difficult to hold the bowels in the cavity of the abdomen with its walls freely laid open, when they were so largely inflated with gas. Strychnia and quinia were continued, with essence of beef and milk porridge diet, and calcined magnesia was given as freely as could be borne without hypercatharsis. This course was pursued for some four days without in the least disposing of the gas or mitigating the suffering caused by its presence. A pretty full dose of calomel and rhubarb, with bicarbonate of soda, was now administered, which operated actively, clearing away the gas and accompanying pain and soreness of the bowels, to the great relief of our patient. The same combination was afterwards repeated every four days, with the salutary effect of maintaining a healthy condition of the bowels. The diet was continued as before, which was believed

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to be as free from the production of gas as any food that could be taken. Some two days before the operation she was put upon a course of opium—four centigrams every eight hours—for the purpose of obtunding the sensibility and raising the nervous system to bear the more liberal employment of the drug when it might become an indispensable necessity.

December 11th, being the day set for the operation, our patient was fully prepared in mind for the ordeal and, physically, in as good condition as could be obtained or even desired. The steps of the operation had been pretty faithfully and carefully studied, and preparations to meet every probable demand were fully and conscientiously made. Not only had all the instruments and other appliances necessary for an ordinary case of ovariotomy been provided and arranged in place, but a full armamentarium of what might be required to meet the emergencies of almost every possible complication had been accumulated. Also, an ample force of competent professional gentlemen had been prudentially convened, in order to insure every possible aid and condition to guarantee a successful operation.

The bowels and bladder having been evacuated, the patient calmly took her position upon the operating table, when Dr. C. Lomax proceeded to administer, by inhalation, a chemically pure article of sulphuric ether, procured by Dr. Dicken specially for the occasion. When she was fully under its anesthetic influence, with the assistance and in presence of Drs. Dicken, Weddington, McKinstry, Horne, Daniells, Flynn, Meek, Dicken, Jr., O'Neal, Jr., and McClain, the operation was performed in the following manner: The principal operator stood to the right of the patient, while Dr. Dicken took a position immediately opposite, on the left, where he could more conveniently manipulate, direct and assist. That of Dr. Weddington was on his right, where he could steady and support the patient's body during the progress of the operation. Others took charge of the sponges, instruments, atomizers, etc. A disinfecting spray of dilute carbolic acid [acid 1, water 30,] was constantly maintained by playing three of the atomizers, which gave a most bountiful supply of the prophylactic mist under which the operation was being performed. An exploratory incision, some ten centimeters in length, was made through the walls of the abdomen, in

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the median line, midway between the umbilicus and symphysis pubis. Upon opening the peritoneum a tolerably free flow of serum escaped. The tumor, being brought in view, presented a mottled appearance, consisting of multilocular cysts, some of which were transparent, while others were opaque, with a pearly glistening color in patches, largely interspersed with solid processes of fibroid growths. The omentum extended but a short distance down in front of the tumor, and presented a dry, reddish, shriveled appearance, very similar to that occasionally found in the dead subject, and was readily turned aside out of the way.

The cysts were of variable magnitude, from that of a marble up to the capacity of a quart measure. With a view of reducing the volume of the tumor and withdrawing the sac through the incision already made, several of the larger cysts were tapped by plunging a trocar into them. The fluid withdrawn was mostly a thick, straw-colored, albuminous substance, but now and then there was a brown or blackish sediment mingled with it, resembling fine coffee grounds; and from one or two there was a pretty free commingling of fluid-blood, possibly from wounding blood vessels by the trocar, which were distributed to the walls of the cysts, in the attempt to tap several from or through the same opening. Some of the cyst walls were so brittle as to break or tear in tapping, leaving the opening so large their contents could not be prevented from escaping by the side of the trocar into the peritoneum, and others, thought to have been emptied, after the withdrawal of the trocar sent forth discharges sufficient to flood the whole viscera of the abdomen. The compound structure of the tumor made it wholly impossible to protect the peritoneum from exposure to this fluid. The fibroid material was so disposed as to form chambers, in which the fluid was contained, through the body of the tumor, and yet imparting such firmness as made it impossible to compress the tumor sufficiently to bring it out through the opening. The incision was now carried down to the pubes and up to the left side of the umbilicus, and the effort to remove it renewed; but it was so firmly impacted in its place as to effectually resist the attempt.

The incision was then carried from the umbilicus to near the ensiform cartilage. This enabled us to lift the tumor from its bed, and withdraw it from the cavity of the abdomen. It was a large,

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irregular, nodulated conformation, with projections reaching out wherever space or room invited, without any adhesions whatever, excepting a small, non-vascular point between the pedicle and fundus of the uterus. Two large blood vessels were found coursing their way from the pedicle in parallel lines up the left and anterior aspect of the tumor. These were inverted in a broad band of hypertrophied peritoneum, and were distributed over the middle and superior portion of the morbid growth. A similar disposition of vessels was found directly opposite this, on the right and posterior side. The thickened investing peritoneum was so loosely connected with the tumor as to be readily gathered up in the fingers, with its vessels, which was done, and temporary ligatures thrown around them at two separate points, and the tissues divided between. The clamp of Spencer Wells was applied upon the pedicle close to the tumor, when we proceeded to make a more careful examination of the parts. In turning the tumor downwards to get a better view of the pedicle, it spontaneously broke away from its connection with the body. But, fortunately, all vascular communications had been secured, and no hemorrhage followed. The two vascular radicals of the pedicle, above referred to, were connected by a membranous union. A needle, armed with a ligature looping two very strong double ligatures, was passed through this thin portion, carrying with it the loop by which the double ligatures were drawn through. These double ligatures were now divided, linked together and brought around the two sections of the pedicle, and the ends passed through the holes of a flat silver tube, Peaslee's ligature shield, including both the shield and pedicle together, and tied with great force. The clamp was now removed, and the end of the truncated pedicle, which had been temporarily ligated, was cut off within 2½ centimeters of the permanent ligature. The end of the shield included in the ligature was applied flat upon the pedicle, while the other was left outside of the wound to serve as a drainage tube. The ends of the ligatures were brought out by the side of the tube and secured to its outer extremity. The right ovary was free from disease, and all sources of hemorrhage having been secured, the cavity of the abdomen was carefully sponged and cleaned of all blood and other impurities from the tumor, as per-

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fectly as could be done, and the wound was now closed and secured by fifteen silver wire sutures passed directly through the parieties, about one inch from the incision, from above downwards. While securing the lower suture, a small amount of bloody fluid escaped from the wound, which may have been concealed among the intestines in the posterior portion of the abdominal cavity, and may have eluded our search in sponging it out. There could certainly have been no possibility of hemorrhage coming up, as everything had been made perfectly secure against it. The ordinary dressings were applied, and secured by long, broad straps of adhesive plaster. Over this a thick layer of cotton batting, secured by a many-tailed bandage, completed the dressing. A full dose of morphia with brandy was administered, and the patient was placed in a warm bed, the inferior extremities surrounded by bottles of hot water.

She did not go under the influence of the ether very readily, and was somewhat restless during most of the operation, showing that the reflex functions of the nervous system were not entirely suspended. At one time during the operation she vomited, which interrupted the administration of the ether until consciousness was so far restored we thought best to add chloroform to the ether to secure a more prompt effect. After this the respiration and action of the heart were, at times, rather alarmingly interfered with. The pulse became extremely feeble and intermitting, and the breathing almost suspended. Dr. Weddington administered brandy with a hypodermic syringe which had been provided, and the assistants depressed the head, and she soon revived so as to permit the operation to go on.

She came from under the anesthesia very promptly, but suffered great and indescribable distress, demanding frequent repetitions of large doses of morphia. In the course of four or five hours she became partially narcotized and relieved of the extreme suffering.

An examination of the tumor after its removal showed it to be a compound of fibro-cystic character, weighing 13 kilograms. In addition to the cystic structure given in the foregoing account, there were large processes of fibroid trabeculæ distributed through the mass, forming irregular compartments similar to the chambers of the heart. Near the central portion of the tumor was a large cavi-

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ty divided into some five or six compartments by thick, solid bands or partitions resembling columnæ carneæ of the ventricles of the heart, all being recesses of the one common cavity, filled with thick and apparently semi-coagulated grayish pus, mingled with albuminous fluid and a small mixture of a blackish pigment. The smaller cysts contained a clear, straw-colored albumen, while in the larger ones more or less blood was mixed with it. The dorsal aspect of the tumor was molded to the body of the spinal column for a portion of its extent, constituting the posterior wall of the large cavity. This part was not more than a half centimeter thick, and mottled with ash-colored spots, brittle and more readily broken than other parts, showing an evident degeneration of tissue tending to perforation of the cavity and outpouring of its contents into the peritoneum at no distant day.

After becoming pretty well narcotized our patient remained tolerably quiet during the balance of the first night, but on the following morning was very faint and prostrated, requiring to be stimulated actively and to take morphia freely. Accompanying this condition there were occasional attacks of sharp, nervous pain between the scapulæ, darting into one of the shoulders and side of the neck, not apparently connected with the surgical wounds, but perambulating from place to place with increasing severity, until acquiring an intensity that was intolerable. During this time anodynes and stimulants were administered freely, but an uncontrollable nausea and vomiting setting in, rejected everything taken into the stomach, requiring all medication to be given in the form of enemata. The relief obtained from the anodynes was only partial, a restless uneasiness continuing under the condition of a decided narcotism. The surface and extremities were cold, requiring the most energetic applications of external heat to maintain anything like a normal temperature. She was pale, faint and thirsty. The pulse was feeble and irregular, running from 95 to 100 generally. The urine was almost totally suppressed. She remained in this condition until the evening of the 13th. Small bits of ice were allowed in the mouth, which were very grateful, and a little brandy now and then given by the stomach, but this was generally promptly regurgitated, mingled with a brown, offensive sordes, and followed by annoying hiccoughs. The bowels became distended with gas, ac-

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companied by painful borborygmus; and finally a very distressing paroxysmal suffering, similar to after-pains, set in, under which she lost all self-control, throwing herself rudely from side to side, panting for breath. She would call to be fanned, raised up, and everything which, in her extremity, she could imagine might bring the least relief. During these reckless exercises there was a pretty free escape of offensive bloody serum from the wound. The prostration was so extreme it was thought safest to neutralize the offensive odor by saturating the dressings with carbolized water, and not to change them. A large gum catheter was introduced as far into the rectum as it could be made to pass, through which a considerable amount of gas made its escape, giving marked temporary relief to the painful tympanites. The tube was allowed to remain for some time, through which tincture of opium in large quantities was injected into the bowels, with the effect of quieting the distressing jactitation, but she was left in a state of muttering, moaning semi-consciousness of some vague and indefinite form of bodily torture. While in this condition chloral, grams .78, were ordered to be given every twenty minutes until the suffering should subside. Soon after the first dose was given the patient fell into a quiet sleep. But through a misunderstanding on the part of the nurse two other doses were given, when she became so profoundly narcotized as to be incapable of being aroused. The breathing was soon interrupted, slow, and finally almost entirely suspended, requiring to be prompted by two assistants, one on each side, with a hand under the back, alternately raising the chest, while the head was thrown back with the mouth open, by which inhalation of air into the lungs was effected, and then depressing the chest with the head elevated, while pressure was made on the epigastrium to force the air out, as in normal breathing. Often four of these artificial respirations were made before a single physiological inspiration could be excited.

Some one of a mathematical turn of mind, noting the number by the watch, reported only four inspirations per minute much of this time. The continuous application of this aid was made for seven hours before normal breathing was sufficiently restored to render it safe to withhold it; and for two hours more these respiratory intermissions became less frequent and prolonged until they finally passed

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away. During this period the pulse was intermitting, and at times so feeble as not to be perceived at the wrist, while the face presented a dingy, ghastly pallor most frightful to look upon. Brandy was given by the mouth freely while the patient was able to swallow, and when able to swallow no longer it was *administered hypodermically and per enemata without stint.* In the evening she became more conscious, and could answer questions understandingly. The dressings were now removed from the wound, which presented no unfavorable appearance, and was washed and redressed with fresh carbolized dressings. On the 14th the irritability of the stomach was not so great. In the meantime two worms had found their way from the stomach into the throat, which were seized by her fingers and thrown to one side. Diueretics were retained in small quantities by the stomach, and in the course of four or five days the secretion of urine improved both in quantity and quality, and on the 21st, ten days after the operation, it was passed *per vias naturales*, and gave no further inconvenience afterwards. Before this it had been regularly drawn away two or three times daily by means of a catheter. On account of the persistent irritability of the stomach, rectal alimentation of medication were resorted to as far as they could be made to subserve the desired purposes. After this the condition of the stomach improved until, at the end of two weeks, it would begin to retain and digest food and tolerate medicine. She was now put upon a tonic course of strychnia, and soon recovered all the functions of a healthy and vigorous stomach. Up to this time she had been terribly tormented by enormous evolutions of gas giving rise to painful tympanites. This condition was often completely relieved by introducing the catheter into the rectum, through which the gas could escape, and the tube furnished a medium through which food and medicine might be injected a greater distance into the alimentary canal.

For a number of days the bowels moved involuntarily, adding much to the offensiveness of the patient's apartment. As the condition of the stomach improved that of the bowels grew better also. After enjoying some days of comparative immunity from pain, the patient, feeling a call to evacuate the bowels, thought to do so of her own voluntary efforts. In bringing these into requisition a sudden lacerating pain was produced, causing alarm from

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an apprehension of serious injury resulting. The pain was followed by a pretty extensive soreness of the abdomen, passing away, however, in a few days without any appreciable harm remaining.

During the stage of depression, which continued for a term of two weeks or more, the energies of the patient were crushed by an overwhelming sense of prostration. Feeling faint, she would sigh and pant for breath, have the doors and windows thrown open, call to be fanned, be raised up, inhale camphor—anything and everything to snatch her from what she felt to be the grasp of death. The face was bloodless, extremities cold, and pulse feeble and unremitting. Again, when some effort at reaction was beginning to manifest itself, she would become warm and bathed in a profuse perspiration, the pulse running from 120 to 130, with hilarity of mind, incoherence of ideas, and inclined to be witty and loquacious. For two weeks she was undulating in the uncertainties of these varying conditions and pathological progonoses. But when the crisis was passed, convalescence was uninterrupted and rapid.

On the morning of the fifth day after the operation we divided the ligatures of the pedicle and removed the shield, leaving the ligatures in place to maintain the drainage, washing out the peritoneum with the following solution:

℞. Sodium, chloride.. .... grams 4.
Acid carbol..... grams .26
Aq. pur..... .... grams 496.
M.

There was but a small amount of pus washed away, and the operation gave no pain whatever. This was repeated every day, excepting one, until the 29th.

On the 18th, one week from the operation, we removed the alternate sutures from the wound and the remaining ones on the following day. There were small collections of pus about a few of the sutures, which escaped through apertures left by their withdrawal. The wound was well united and free from inflammation. In a few days the strands of the ligature came away, and a silk ribbon, saturated with the albumen of an egg, was introduced to maintain the drainage. The intra-peritoneal washes were continued daily for eighteen days, as before stated, when the secretion of pus had become so small as to render their further use unnecessary. The

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seton was changed every day to the 12th of January, when the discharge was so slight it was deemed safe to permit the sinus to close, and the seton was discontinued.

The attachment of a portion of the pedicle to the fundus of the uterus, before named, was allowed to remain without being broken up during the operation. Since the healing of the wound the uterus is found to occupy a position high up in the pelvis, with the os turned to the right side, supposed to be drawn into this position by a contraction of the stump of the pedicle in cicatrizing.

When convalescence became fully established it progressed speedily, without the least interruption, until, at the end of six weeks, our patient had so far recovered as to return to her home in comfortable health and highly gratified with the result of her case.

Review and Reflections.—After the shock the great dangers of the operation are peritonitis and toxemia. The liability to peritonitis is largely proportioned to the extent of the incision and irritation of the peritoneum by handling, exposure to the air and contents of the tumor. These sources of inflammation should, therefore, be guarded against as much as possible. The shorter the incision the fewer stitches will be required to close it. It should be no longer than will admit the ready removal of the tumor. It is better, however, that it be sufficiently extensive to facilitate its prompt removal without imbuing the peritoneum with its morbid contents, and also to avoid a tedious and embarrassing process of removing the tumor. You thereby save the irritation of a tedious sponging and cleansing the cavity of the abdomen and exposure of its viscera to the action of the atmosphere. A most prolific source of toxemia is also cut off by preventing the vicious contents of the tumor from coming in contact with the susceptible peritoneum. The fibro-cystic composition of the tumor made it almost impossible to avoid polluting the peritoneum, in our case, after it was tapped. Now, we know the difficulty of compressing the tumor before puncturing any of the cysts, we might have made the incision as extensive at once as we finally had to do, and have removed it without exposing the peritoneum to contact with its contents. But when the cavity of the abdomen has been flooded by any poisonous fluid it is by no means an easy or simple matter to get rid of

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it. This, no doubt, added much to the subsequent hazards of the case.

A very protracted depression of vital activity followed upon the shock of the operation; or, it might almost be said the shock was prolonged, and very slowly faded away in about two weeks. This very precarious condition, the source of such anxious apprehension for so long a time, may not have been entirely without both prophylactic and remedial value to the ultimate outcome of the case. Reaction was steadily held below the point of destructive inflammation, which may have protected the patient against fatal peritonitis. And it is not impossible that this condition imparted increased toleration to the intraperitoneal washes, and thus contributed to the escape from toxemia.

The simple but ingenious little instrument of Dr. Peaslee I regard as a highly valuable addition to the catalogue of instruments for ovariotomy.

In conclusion, I might suggest the employment of silk sutures for closing the abdominal incision; or a slight change, to conform to the method of Emmet, in applying the silver wire ones, in addition to what has already been alluded to in reference to the operation, as the only improvements my reflections would enable me to make in the treatment of the case, from the time it was first submitted to my care until all professional relations with it were terminated.

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DISEASES OF THE CERVIX UTERI.[1]

JAMES LAMB, M. D., AURORA, IND.

The cervix uteri, suspended, as it is, in the upper part of an elastic tube, like a ball suspended by a rubber cord, is exceedingly liable to concussion from sudden pressure from above and from mechanical injury from below, as from coitus, from awkward or unwarranted gynecological manipulations, from the instruments of the accoucheur, and from the passage of the fetus during parturition and, being that part of an internal organ that has an external exposure, it is very liable to disease from atmospheric changes and exposures. Now, if in addition to these conditions we take into consideration its rich nervous endowment, its direct communication through nerve filaments with the solar plexus, "the brain of the sympathetic system of nerves," the system that presides over organic life, it is not strange that we find its diseases varied and numerous, and that they give rise to more suffering and simulate more forms of disease than any other organ in the female economy. Its diseases are so numerous, I can not be expected, in a short paper like this, to much more than allude to them.

First, then, we have chronic congestion, with increase of connective tissue, resulting in hypertrophy. Then we have inflammation of all grades, from the most acute to the most chronic, and its sequelæ, and we have subinvolution with its attending evils, and we also have rupture from the passage of the fetus or from the use of the instruments of the accoucheur. Inflammation may attack the

(1) Read before the Dearborn County Medical Society, March 30, 1880.

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mucous membrane alone, or it may attack the parenchyma alone, but it is very rare for either to be attacked without involving the other. It most usually begins in the mucous membrane of the vaginal surface, either from mechanical injuries or from imprudent exposure to atmospheric changes, and extends up into the canal frequently as far as the internal os. It also often extends more deeply, involving the submucous tissues, causing follicular and granular inflammations, and inflammation of the musculo-fibrous parenchyma. We have, as sequelæ of inflammation at this point, simple erosion or abrasion, in which the ciliated epithelium covering the basement membrane is removed, and the deeper erosion in which the whole thickness of the mucous membrane is carried away. As a result of this deep erosion, we have granular and follicular inflammation and sometimes ulceration. We have also vascular polypus or sarcoma. A more serious form of disease sometimes develops from the eroded surface; the papillæ enlarge and form a strawberry-appearing growth—"the cauliflower excrescence." We have also granular or mucous polypus, from the size of a pea to that of a walnut, usually stalked. In addition to these diseases, the result of inflammation, we may have rupture, from the simple giving way of a few superficial fibers to the separation of the walls of the cervix from the os externum to the body of the uterus. The rupture may be single, double or stellate. When stellate, all the ruptures are not likely to be of the same depth. Some of them will probably be very slight, while others will extend through the whole extent of the cervix. But deep ruptures are more likely to be lateral, dividing the cervix into an anterior and posterior half, laying open the whole of the cervical canal, at least, I have observed more of this class than any other.

As we can not pass under review the symptoms and treatment of all the diseases above enumerated, we will, with your permission, study for a few minutes the symptoms and treatment of abrasions and ruptures. A lady presents herself for advice, and you proceed to get a history of her case. She will most probably tell you that some months or perhaps years before, she had an abortion, or that she had a severe labor, or perhaps an easy labor, but tedious recovery, or that she was very well, but got out of bed in three or four days, and soon began to feel badly, and has not been well since.

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These are a few of the most common causes usually given as the origin of the difficulty. If you pursue your inquiries further, she will probably tell you she has heart, or liver, or kidney disease, disease of the stomach or brain, or that she has gravel, or that she is going to lose her mind.

If we seek more particularly for the subjective symptoms we will probably find she has pain along the spine, in the occiput, and, if the case is severe and of long standing, burning pain on the top of the head, pain in the stomach, pain in the left side between the sixth and seventh ribs, pain in the iliac regions, also in the lumbar and supra-pubic regions and down the thighs. In short, there is scarcely a pain or an ache that afflicts humanity that she is not subject to. If we look after the secretions we find the bowels irregular, generally constipated but occasionally too loose; appetite capricious, sometimes good, but generally poor; urine depositing phosphates and frequently painful in passing; menses irregular, sometimes come on time but discharge too scant or too free, and between the periods a discharge, sometimes mucus and sometimes muco-purulent, from the vagina, that corrodes or abrades the external genitals. Sometimes, but very rarely, we meet a case where there is no history of any discharge per vaginam. Examination by taxis and palpation may not reveal anything very abnormal, but if we press the finger against the anterior surface or in the fornix vaginæ, against the posterior surface near the point of union between the body and cervix, we will be sure to find a tender point, although we may not find anything else unnatural. These are the objective symptoms we find in the milder cases.

In the severer cases we will find the cervix too low in the pelvis, very much too large, and imparting to the finger the sensation of pressing against wet velvet. Possibly we may find it very sensitive, but if it has been of long standing it may not cause any sensation of soreness or pain. If we introduce the speculum, in the first-named condition, we will find the cervix about the natural size, the os slightly patulous and probably throwing out a little tough mucus, but we are just as likely to find it closed and not discharging anything unnatural. If we now attach a little cotton to a wire and pass it up through the canal to the internal os we will find a tender point, and as we withdraw it we are almost sure to find tough mucus,

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stained with blood, attached to it. This is frequently so tough as to remain attached to the cotton till it is drawn through the whole length of the speculum before its attachment in the canal will give way. The pain caused by touching the tender point in the canal is frequently extended to other points, as the back, the head, the side, etc. Now, when we find this condition of things, are we warranted in attributing the train of symptoms we have enumerated to this as the central point, or *point d'appui?* The best answer that can be given in the case is the clinical result. In any of those cases, if we trace their history, we will almost invariably find they have taken a large amount and a great variety of medicine, and most probably have been treated by several physicians and for quite a variety of diseases. I know it is difficult to realize that so small a point of disease can cause so much disturbance in the economy. But if the diagnosis is clear, properly directed therapeia will be sufficient in its results, I think, to convince any gentleman of the correctness of the position. In the more severe forms of the disease, the speculum will reveal the cervix too low in the pelvis, very much too large and extensively abraded, the abrasion extending up into and frequently through the whole length of the cervical canal, the external os wide open and throwing out freely tough mucus or muco-purulent looking material stained with blood. But the internal os is always closed, unless the disease has extended up into the cavity of the body of womb, or unless the examination be made a few hours after the cessation of the menses; then it is always open. We would naturally expect a cervix in such a condition to be very sensitive; such is sometimes the case, but frequently the nerves have become so obtunded that they will only respond to the most powerful stimulants. As a rule, the cervix is more sensitive in the milder cases than in the more severe. The practical question is, how are such cases to be treated? T. Addis Emmet, in his recently published work on gynecology, condemns unconditionally all caustic applications, and recommends the use of hot water "ad infinitum;" but a few pages further on, if the case is not progressing favorably, he recommends the use of chromic acid, crude carbolic acid, Churchill's tinct. iodine, etc., etc. When I read this I could not help exclaiming, "Oh! consistency, thou art a jewel!"

That the indiscriminate use of escharotics, and the more power-

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ful astringents, have done and do cause infinite harm, I think there can be no doubt; but that the judicious use of them in many of these cases is necessary to conduct them to a satisfactory termination, I presume any gentleman of experience in the treatment of them will be willing to acknowledge. I am not egotistical enough to think myself better able to treat these cases than my brethren of the society; but, as I find them tedious and troublesome, I feel it will be an advantage, to me at least, to have an interchange of views in regard to the management of them, consequently I am encouraged to speak of my own course of treatment. A course of treatment I find, (with Emmet, not after him, for I had been using it long before I knew anything of his course), of general applicability, is water at a temperature of from 100° to 105° Fahrenheit. This, thoroughly and persistently applied, will probably accomplish more than any other one means that can be used. But we can not neglect other local means and constitutional treatment. In the use of local means, in the milder cases, I have not found anything equal to a solution of nitrate of silver of the strength of four grams of nitrate of silver to thirty-two grams of water. I have used it of all strengths, from the solid stick down to six and one-half decigrams of the nitrate to thirty-two grams of water. The solid stick cauterizes too much, and the weaker solution does not stimulate enough. If the cervix is much enlarged, I find it is an advantage to paint the vaginal surface with Churchill's tincture of iodine at each visit, after the application of the nitrate of silver solution to the abrasions. These applications should be made about every seventh day in the interval between the menses, but they should not be made nearer than four or five days before the time for its appearance. In those more severe cases, with abrasion and granular or follicular enlargement or ulceration, we need something stronger than a four-gram solution of nitrate of silver. In this condition, the fuming nitric acid has been more successful, in my hands, than any of the other caustic applications. I have used all, or nearly all, of them, except the actual cautery; the chromic acid, the carbolic acid, the acid nitrate of mercury, the pottassa cum calce, etc., but the nitric acid has been more efficient and less painful than any of them.

As to rupture of the cervix, the eminent authority already quoted,

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T. Addis Emmet, states that at least one-half the diseases of women who have borne children are produced by this cause, and that they can only be cured by a surgical operation. If he is correct in this statement, his predecessors must have been very slow to recognize the condition, and his contemporaries must be very poor diagnosticians, or else they do not attach so much importance to the condition. The older authors, as Colombat, West, Ashwell, Hodge and Bedford, do not even mention the injury. Thomas speaks of an operation on the cervix for the cure of vesico-vaginal fistula, but he does not speak of rupture of the cervix as being an accident requiring operative interference. He speaks of an operation for eversion of the mucous membrane of the cervical canal, but not in connection with rupture at the os cervix. But he, as well as most, if not all authors on gynecology, recommends slitting up the cervical canal for the relief of dysmenorrhea, and for the purpose of straightening the cervico-uterine passage. If they thought rupture of the cervix so serious a matter as Emmet is disposed to make it, I presume they would be very slow to recommend to cut it open.

Barnes speaks of injury to the cervix caused by labor and gives a graphic description of the peculiar and granular ulceration following it, but he does not advise an operation to cure it, nor any other than the usual treatment for this class of diseases in their graver forms. It appears to me, gentlemen, that it is very important for us to ascertain what is true in regard to this condition. If Emmet's position is the correct one it is necessary for us to prepare to sew up the cervix of every fifth or sixth woman who has borne children. But is it true that granular disease, caused by ruptured cervix, will not heal without an operation? I would not presume to put my limited experience against so eminent authority, but I have succeeded in healing this class of diseases in ladies who have ruptured cervix, and I do not see that they are any more liable to relapses than those affected from other causes. I do not pretend to say that there may not be cases that would be restored to health sooner and with less pain by an operation; but that this is the rule I do not believe, but rather the exception. I see a lady on the street every few days who has a ruptured cervix through the lateral walls entirely up to the cervico-vaginal connection. I first saw and treated her ten years ago. When she applied to me, the lips were everted

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and covered with granulations that bled very easily, and when handled a little roughly, profusely; and as a consequence her general health was very much reduced. In this case I suggested an operation but she would not consent to it. I put her on the usual course of treatment, both local and general. She rapidly recovered, became pregnant, had a healthy male child at term, and has had none of her trouble since. But of course parturition did not remove or cure the rupture. This is not an isolated case. I could give a number from my note-book, but it will add nothing to the facts in the case. I give the above, as it is a typical case and shows that if an operation is advisable it is certainly not often necessary.

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CASE OF UMBILICAL HERNIA.

A. A. HAMILTON, M. D., MARION, IND.

On the evening of the 8th day of March, 1880, I was called to attend Mrs. Charles Atkinson in confinement. Upon my arrival at the house I at once made an examination per vaginam, and found the os well dilated, and the head of the child presenting. The labor progressed rapidly, and without any accident to the mother, and in less than one hour a female child, of medium size, was born into the world. Upon throwing back the bed clothes, for the purpose of ligating the cord, I was momentarily startled by the sight of a large, fleshy mass protruding from the abdomen in the region of the umbilicus. A hasty examination enabled me to pronounce this tumor an umbilical hernia. This hernia was slightly pyriform in shape, measuring about twenty-six centimeters in circumference at the base, and about twenty-seven centimeters at its greatest circumference. Measured longitudinally, the distance from the base to the most prominent part was perhaps twelve and a half centimeters. It was covered by a thin, translucent membrane, part of which seemed to be the distended sheath of the cord, the remainder more nearly resembling the peritoneum. The upper part of the tumor had a soft, doughy feel, and appeared to contain folds of intestine, distended by flatus, but upon making deep pressure, a hard, resisting mass could be felt, which I decided to be some of the solid viscera—either the liver or spleen. Repeated efforts were made to reduce this tumor, but its contents could not be forced back into the abdomen. The umbilical cord was at-

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tached near the base of the tumor, and a little to the left side. It was normal in appearance, and of the usual size. Aside from the rupture, the child was well developed, and apparently healthy. An unfavorable prognosis was given at the time, but the nurse was directed to maintain as steady pressure as possible by keeping the child's bandage tightly drawn. At first the child was very fretful and restless, and refused to nurse. About the third day it began to improve; was less fretful, nursed tolerably well, and discharged urine and feces regularly. It had been noticed from the first that when the child cried the tumor seemed to become more full and tense; but this, I thought, was owing to the pressure behind the tumor, caused by the contraction of the abdominal muscles. On the fourth day a broad strip of rubber adhesive plaster was drawn tightly over the enlargement, and the nurse was directed to tighten the plaster from day to day in case the tumor seemed to diminish in size, which, however, it did not seem inclined to do.

On the 11th day I visited the case again and found the rupture somewhat reduced in size and covered with small ulcerated patches, which were discharging a terribly offensive matter. An ointment of oxide of zinc and vaseline was prescribed and the plaster reapplied. The case seemed to do well until the 4th day of April, when the child was suddenly taken with convulsions, and died in about eighteen hours.

The tumor had decreased in size somewhat in its longitudinal diameter, owing, as I supposed, to the fact that the intestines had returned to the abdominal cavity. The sac was still as large as before in its transverse diameter, but seemed to contain only the hard resisting mass before alluded to.

At the post mortem, held eighteen hours after death, the following notes were taken by Dr. William Lomax:

"Cadaver somewhat emaciated. Right leg and foot slightly edematous. A large, prominent exomphalos presented. The most prominent portion was covered by a thin epithelial tissue, very similar to the prolabia and about the same color. Shallow patches of ulceration were scattered upon it. This discolored epethelial surface was circular in form and some nine centimeters in diameter. The skin was perfect up to this border, which was

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well marked by the arrest of development. On opening the abdomen it was found that the deficiency of development extended to the parietes, leaving an opening in the walls answering to the discoloration of the surface. This opening was occupied by the liver, to which the thin cutaneous pellicle was adherent. The liver was large, weighing about one-half kilogram. Two deep fissures were found on the under surface of the left lobe. The lobus quadratus was large and projecting. The border of the right lobe was a thickened, semi-cylindrical rim. Stomach and bowels empty. All the viscera except the liver normal. This was a case in which the deficiency could only have been remedied by detaching the walls of the abdomen from the thin intervening substitute and bringing them together and securing them by sutures—a most heroic, hazardous and unwarranted operation. Death from convulsions, not directly from abnormity of the abdomen."

REMARKS.—After having carefully examined a number of the latest and best works on surgery, with a view of ascertaining the frequency of this affection, I am forced to believe that, while small or moderately large tumors, containing one or more folds of intestine, are comparatively common, umbilical tumors of the size and character of the one just described in your hearing are extremely rare, and therefore of interest to physicians.

Tumors of the umbilicus may be congenital or acquired, and while the affection is most common in children, it is occasionally found in adults—especially in women who have given birth to a number of children.

CAUSES.—In the fetus these tumors generally depend upon, or are accompanied by, a defect in the walls of the abdomen, caused by an arrest of development; but whether this deficiency is primary, permitting the viscera to protrude, or whether the tumor is first formed by the forcible expulsion of its contents, owing to violent efforts of the child in utero, thus preventing the closure of the abdominal walls, are questions which I am not prepared to answer.

In the child, after birth, and in the adult, hernial tumors are generally caused by a succession of violent muscular contractions (as crying; severe and protracted labor; straining at stool, etc.), forcing the abdominal contents continuously against the thin and

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weakened abdominal walls in the umbilical region. In the adult these tumors are generally found in persons with enlarged and pendulous abdomens, in whom the muscles are thin and relaxed. Congenital umbilical herniæ of large size are frequently accompanied by an arrest of development in other parts of the body, as hare-lip, bifid spine, etc. When the rupture is congenital and of large size, the sac is usually formed by an expansion of the thin, translucent covering of the cord, together with the peritoneum. In children and in adults the hernia, when acquired, is generally covered by the cuticle or true skin. In these cases the contained viscera are forced through the muscular ring, pushing onward the skin, superficial facia and peritoneum, thus forming a sac.

VARIETIES—Umbilical tumors may be divided into several varieties, according to their situation, their size and their contents. In regard to situation it may be said that while the exomphalos is generally contained in a single sac, protruding from the abdomen at the umbilical opening, rare cases occur in which the hernia, after passing through the ring, insinuates itself between the muscles and the skin. In other cases the tumor may be situated to one side of the mesial line; and, again, cases have been reported in which there was a double sac—one containing omentum, the other intestine, etc. As to size these tumors vary greatly, some being no larger than a marble, while others extend as low down as the pubes. With reference to their contents, we may remark that ordinarily they contain folds of small intestine alone, or accompanied by the cecum, colon or omentum. Tumors of large size may contain the liver, spleen, or, in rare cases, the stomach; and in the adult female even the gravid uterus may be found contained in a hernial tumor.[1]

PROGNOSIS.—If the tumor contain only intestine, and is of small size, and especially if the patient be young and otherwise healthy, and the hernia reducible, the prognosis is generally favorable. In such cases, if reduction be maintained by proper appliances for a suitable time, nature will accomplish a cure by the contraction and final occlusion of the umbilical ring. On the other hand, if the hernial protrusion be of large size, and its contents some of the solid viscera confined in a sac formed only of peritoneum and the

(1) Gross' Surgery, Vol. II., p. 713.

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envelope of the cord, death generally follows in a short time—usually from peritoneal irritation, followed by convulsions, etc.

When the tumor is large and irreducible, the patient generally has the symptoms usual in intestinal obstruction in other situations, viz., nausea, colicky pains and constipation. If the obstruction be not removed, or if the tumor become strangulated, without speedy relief the prognosis is of course unfavorable.

TREATMENT.—This will vary materially according to the size and kind of tumor, and should be adapted to the peculiar requirements of each individual case. For the congenital or acquired tumors of children, where the rupture is small and reducible, and contains only a loop of the large or small intestine, an operation may be necessary. This consists in bringing the edges of the ring together, after the hernia has been reduced, and retaining them in position by means of needles passed through the sides of the abdominal opening and fixed with thread, as in the operation for hare-lip.

If the nature of the case is such that it is not considered safe or necessary to operate, reduction may be accomplished and afterwards maintained by means of a truss or pad. A flat or slightly convex pad may be kept in close apposition with the tumor by means of adhesive strips passing over it and attached to the sides of the abdomen. This appliance not only prevents the tumor from enlarging with every effort of the child, but it assists in obtaining a cure by favoring the closure of the ring. A very simple truss may be made by fixing a flat pad of celluloid, vulcanized rubber, or wood in the center of a band three or four inches wide and long enough to encircle the body. This band may be made of cloth, rubber webbing or rubber adhesive plaster, as may be thought best. The pad is placed over the enlargement and retained in position by the belt or band to which it is attached. Spring trusses of various patterns are also made by instrument makers for the treatment of this disease.

When the tumor is large and irreducible it may become necessary to sustain it by means of an abdominal supporter, made of some elastic material or inflated rubber.

If symptoms of obstruction are present the treatment should be, rest in the supine position, local applications of ice, opium internally, and an enema to empty the lower bowel and a purge to clear

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the upper. If the tumor is found to be strangulated taxis should be tried as in other varieties of hernia.

When all other means have failed to relieve the strangulation, herniotomy may be necessary. When performing the operation the surgeon should endeavor, if possible, to avoid opening the peritoneal sac, as death almost invariably results when this is done. The stricture, when found, should be divided and the bowel returned with as little manipulation as possible. If the hernia is irreducible the surgeon should, if possible, divide the stricture and leave the bowels in their adopted locality.

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INJURY OF THE HEAD WITH FRACTURE OF THE SKULL.

WM. LOMAX, M. D., MARION, IND.

Miss O. W.——, a healthy, athletic young lady, while riding in an open buggy with her sister on the twenty-second of September last, met with an accident resulting in severe injury of the head. One of the wheels striking a stump threw her sister, who was driving at the time, out of the buggy, and, letting go of the reins, left the subject of this narrative alone in the buggy with no means of controlling the frightened horse. Alarmed at her perilous condition, she leaped from the vehicle when it was moving at rather a rapid rate, and was thrown forcibly upon the ground. The head struck upon a stone or other solid substance, inflicting a severe contusion of the soft tissues just above the right brow, with fracture and slight depression of a fragment of bone beneath. She was stunned and insensible, and for a time thought to be lifeless. Respiration, which at first was measurably suspended, after a short time returned, and, with the assistance of a gentleman meeting her just as the accident occurred, she was enabled to get to a house near by. I saw her in a short time, probably two hours, and was told that as consciousness returned she was able to speak somewhat intelligibly of the accident, and manifested an anxious concern for her sister who had been thrown from the buggy; but she soon lapsed into an incoherent and partially unconscious state, with a strong tendency to coma; the pupils dilated, the right more than the left; pulse feeble, slow and intermitting; temperature of body

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reduced, and the extremities very cold, accompanied by nausea and vomiting.

Warm applications were sedulously made to the extremities and cold applied to the wound upon the head, and whisky and opium in small quantities were given by the stomach. In the course of three or four hours the warmth of the body returned, and consciousness was partially restored, with more or less confusion of ideas; the pulse improved in force and rythm, but continued slow, varying in frequency from 50 to 56 per minute.

After this she was placed upon a litter and carefully carried to my house, a distance of two miles, without the least injury. As consciousness returned there was exalted sensibility to light and sound, with pain and excessive heat of the head when not energetically subdued by free applications of ice and ice-water, while the tendency to coldness of the feet required the constant employment of bottles filled with hot water placed around them to maintain a normal temperature. The nurses observed that it required much less effort to keep the head cool when the inferior extremities were kept warm.

For some five or six days there was a marked disposition to stupor, and more or less fever for a week, but never excessive. Under the vigorous use of acetate of ammonia and spirits nitre, with veratum viride internally, and cold applications to the head, it never became strongly developed. The pulse rarely ever became hurried. A few times it ran up to 80 or 85, never higher. It was usually sluggish, below 60, and feeble, never acquring a force that would justify venesection. A full cathartic was given on the morning after the injury, consisting of calomel, jalap, rhubarb and bicarb. soda, and by the assistance of an enema it operated freely, and was followed by improvement of the brain symptoms. After this a laxative condition was steadily maintained. The cold applications to the head and warm to the feet, with sedative medication internally, were persevered in for six days before the disposition to excessive reaction had notably subsided. After this they were employed more sparingly until the eleventh or twelfth day, when they were left off. She was now able to sit up and walk about the house, but feeble and subject to vertigo, and had a very unpleasant feeling, as if a strong band were drawn tightly around the forehead. At this time she was taken home by her friends, and steadily improved until all

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the inconveniences of the injury had passed away and the health was perfectly restored. There still remains a slight depression of the fractured bone, but she enjoys good health and suffers very little inconvenience from the accident.

The value of all observations in practical medicine is derived from the illustration of some principle which they may tend to fix in the mind of the physician as a reliable rule to guide him in the adaptation of his remedies to the various phases of suffering he may be called to treat; or of some physiological fact of scientific moment in elucidating the abstruse endowments and functions of the living animal economy. And they may also be suggestive of profitable investigations, directing professional thought into channels and upon subjects that may yield rich compensatory contributions of great benefit to the age and the race. There can scarcely be any case, however simple, in all the broad and varied field of professional duty that will not involve elements of vital interest that are only imperfectly understood, leaving much that is submerged in the obscurity of the dark unknown and unexplored. Hence every glimpse of concealed truth, physiological, pathological and therapeutic, that may be caught by the vigilant eye of scientific observation should be faithfully registered and carefully studied, until the mantle of darkness may be lifted from the arena of many dormant agencies and, as yet, sleeping activities which may be of inestimable benefit to the future of the healing art. In this spirit we propose to review the case before us, and endeavor to educe from its analysis such conclusions as may be logically drawn from its teachings, and which, it is hoped, may not be without some practical value.

In the first place, the case presents a condition which, in surgical expression, is termed concussion of the brain; and it may be remarked that in the sense in which the term is here employed, a liberty of speech has been taken by the profession in no wise restricted to its true etymological signification. In professional acceptation the term is made to overreach the mere vibrations among the aggregate molecules of the brain itself, and to embrace all those disturbances of normal friction and those pathological phenomena which result from the mechanical violence. The suspended consciousness, confusion of intellect, depressed circulation, pallor of

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countenance and cold extremities are all taken as so many conditional integrals of the complex idea conveyed to the mind by the term concussion. All of these symptoms are but results of the molecular vibrations to which the brain has been subjected. So that the term conveys a definite and uniform meaning to all, it will answer the purposes of professional convenience, and is therefore unobjectionable. Concussion, then, as an objective condition, we will consider to imply a sudden agitation of the corpuscles of the brain among themselves, without laceration or structural lesion of the delicate, tenuous tissues which maintain them in that intimate anatomical relation to each other that constitutes the aggregate organism of the normal brain; without rupturing any of its blood vessels, however minute, and with all the catenation of symptoms above enumerated as consequences of this mechanical commotion. This we regard as having been the true condition of our patient. Immediately after striking the ground she was insensible and thought to be lifeless. Consciousness returned after a short time, and with some assistance she walked a part of the way to a house near by. This locomotion, however, was rather an instinctive than a voluntary and intellectual act directed and controlled by the judgment.

The disturbance of innervation, intellection and the circulation was instantaneous and the direct effect of the concussion. The functions of the brain were enfeebled, not entirely suspended. Shortly after receiving the blow evidences of compression were exhibited in an increasing tendency to coma and more complete obliteration of intellect, with deep stertorous breathing. A rational explanation of this condition would seem to be that the capillary blood vessels of the brain were partially paralyzed by the shock, and dilating to the ingress of blood, permitted an intravascular congestion, which produced the symptoms of compression that were so manifestly present. Had these symptoms been caused by extravasation of blood they would have been more persistent and permanent.

In cases where the violence dealt has been a little greater, the injury to the capillaries may permit a very slight exudation of the coloring matter of the blood, giving a reddish tint to the neighboring portions of the cerebral substance. By some this con-

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dition is denominated a contusion of the brain; but the application of this distinctive term to designate such special lesion has by no means been sustained by the endorsement of the profession, and it involves a seeming inconsistency that will always render it an objectionable term. A contusion implies a bruise or injury inflicted by some blunt substance upon the soft parts, and may be of varying degrees of intensity, from a slight rupture of blood-vessels, producing ecchymosis and discoloration of the part, to that in which the tissues are reduced to shreds and pulp. In the milder cases the injury is of but little note. The functions of the part being but slightly disturbed, soon recover their normal activity, while in the more severe cases they are wholly destroyed. The lesion in the cerebral capillaries is not the result of the direct contact of the solid substance producing it, but of the agitation of the particles among themselves, without affecting the consistency or solidity of the brain in the least. Without further discussion of this subject we may remark that any injury to the brain amounting to a real contusion, without destruction of its organism, would be a very refined and delicately executed work, not often to be met with in the list of casualties to which this organ is exposed. Contusion, therefore, as a probable condition, is equivalent to a disintegration of the organism of the brain, and a total and permanent obliteration of the functions of the contused parts, and for all practical purposes might be eliminated from the nomenclature of brain injuries without the least damage to surgical terminology.

Our case also presents the pathological condition of compression of the brain, not only from vascular turgescence, but from depression of a portion of fractured bone. It is not within the scope of this paper to give the differential diagnosis between concussion and compression, nor the kindred manifestations of compression and contusion, or mechanical destruction of the brain. Every grade of derangement, from the slightest deflection of normal function up to the total obliteration of all the functions of the brain, may mark the progress of compression from expansion of blood. Its progress will be more or less prolonged; while in compression from a depressed portion of fractured bone, the symptoms, on the contrary, will be sudden and instantaneous. In the case reported the functional symptoms of compression resulting from the depressed bone

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were strictly negative. And, it may be asked, why were they such? When a portion of the skull is driven in so as to encroach upon the intra-cranial cavity, how can it be that the brain is not injuriously compressed by it? And will not any and every compression of the brain disturb its functions? While we may be unable to render a satisfactory and logical answer to these questions, we can have no difficulty in sustaining the proposition that such facts as above intimated do have a real existence, for they have repeatedly come under our personal observation, and we know they do occur. But to what extent such intrusion upon the capacity of the cranium may be made without deleterious interference with the functions of its viscera we may not be able to say. Nature seems to have foreseen the liability to the occurrence of these accidents, and wisely to have provided a protection against them in the diffusion of the cerebro-spinal lymph in the cavity of the cranium and its ready exit through the lymph channels when the space it might occupy should be demanded to compensate the condition of an accident. Physiologists estimate the amount of this fluid at several ounces; and scientific observers are of opinion that nearly an equal amount of reduction of the capacity of the cranium may take place before the functions of the brain will be suspended. Hence a considerable amount of depression or effusion may exist without necessarily resulting in fatal consequences. In this case the depression did not materially interfere with the healthy functions of the brain, and was, therefore, not interfered with; but where grave cerebral symptoms show themselves the safety of the patient requires that the depressed bone be elevated, an operation that usually calls for the employment of the trephine. But in a few cases we have obtained the most perfect and satisfactory results from pneumatic force improvised through the medium of an air-pump and cupping glass. And had we been able to procure them we should have given the treatment a trial in this case, and probably with a fair prospect of success. The remedy is so simple, safe, and, in suitable cases, so efficient, that it should always be resorted to where not contraindicated. In all compound fractures, where pneumatic force is liable to exude brain substance, the treatment would manifestly be improper.

In all cases of injury of the brain not resulting in immediate, or very early death, the conditions to be combated will invariably be

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consecutive inflammation, or effusion, or possibly both. The latter is the more grave condition of the two. But the only treatment which can promise the least benefit in this case is also that which is eminently suited to the former. Soon as the perilous depression has passed away, the most energetic efforts should be made to anticipate and control these formidable conditions. All means calculated to allay excitement and prevent an undue flow of blood to the brain should be promptly put in requisition. Indeed, the circulation of the brain should be limited to the minimum of vital safety. The depressed, feeble cerebral activity resulting from the shock should be utilized as a valuable therapeutic condition. Taking advantage of this; excessive reaction may be prevented and the safety of the patient greatly promoted. Perfect quietude, with the head elevated and kept cold by the free application of ice and ice-water, while normal temperature of the extremities was steadily maintained, exclusion of light and noise from the room, thorough evacuation of the bowels by a drastic cholagogue cathartic, the energetic employment of arterial sedatives and of diuretics, with a bland, unirritating diet and regimen, carried our patient over without excessive excitement ever becoming established. This plan of treatment was adopted early, before reaction ran up to the normal standard, and was persevered in steadily so as to effectually control all tendency to inflammation; and the gratifying result most fully and clearly vindicated the correctness of the principle upon which the treatment was conducted. It goes to show that the depressant or sedative treatment, early adopted and judiciously tempered to the force and energies of the circulatory system, may repress excitement and effectually cut off the incoming dangers of a destructive inflammation before the condition is fully developed, thereby making the patient's condition one of much greater safety, while the duties of the physician are rendered more clear and intelligible, and his services, in the preservation of human life, invested with an infinitely greater value.

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EXPERT EVIDENCE: WHAT IT IS.

F. J. VAN VORHIS, M. D., B. L., INDIANAPOLIS, IND.

The great advancement in scientific knowledge, the additions that are each day being made to the number of known facts, the constant changing of hypothetical into positive knowledge, the becoming a matter of common information of that which but yesterday, though based upon the most advanced scientific knowledge, was but an intelligent opinion, and the multiform ways in which the facts of science and the opinions of scientific men are related to the affairs of society, make the question as to the relation of the facts of science and the experts in the sciences and professions to courts and legal investigations one of no little importance. It is a question to the importance of which the medical profession of this State has been for several years fully alive.

Our esteemed friend, Dr. Wilson Hobbs, has read two valuable papers before this society upon "The Medical Witness," the first of which appears in the Transactions of 1877, the other in the Transactions of 1878.

After two such exhaustive papers I present this paper with some diffidence, and the more so because I find myself compelled to differ somewhat from some of the views expressed in the papers of Dr. Hobbs; not so much as to what is the law in regard to the compensation of expert witnesses, but more particularly in regard to what constitutes an expert witness, and as to what is expert evidence.

The general meaning of the word expert is well understood, and I need not consume time or space by repeating it, but just

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what the word means when applied to witnesses and to evidence I have not found it so easy to determine. Is a witness called to testify to facts that belong particularly to the sciences and professions an expert witness in the meaning of the law? Is the statement of a fact that belongs particularly to the sciences or professions expert testimony, or is an expert witness one who is, by reason of his peculiar knowledge of the facts of science and his skill consequent upon such knowledge, deemed competent to explain to the court and jury the significance of facts in issue, or facts relevant to facts in issue, and to express an opinion concerning the proper conclusions to be drawn therefrom? Is expert evidence but the expression of an opinion by one deemed competent, by reason of experience, to express an opinion? Where is the line to be drawn between the ordinary witness who is sworn or affirmed according to law to depose as to his knowledge of facts in issue, and the witness who testifies only and properly as an expert?

It would appear to be necessary, to properly solve any question growing out of or connected with the subject of expert evidence, that a clear answer should be given to these questions; that a clear understanding should be reached and a clear expression made of what is properly to be considered expert testimony.

In the investigation of this subject the confused way in which the facts of science and the opinions of scientific and professional men have been interchangeably used is quite apparent. Often the law is discussed as applied to the expressions of opinions, while in the application of the law no distinction whatever is made between the expression of an opinion and the statement of a fact. Particularly is this so in the recent cases of Buchman *vs.* The State,[1] Dills *vs.* The State[2], Ex parte Dement[3], a case decided in the Supreme Court of Alabama, and also in an article of very recent date by J. L. Lodge[4], in the Southern Law Review.

The question involved in these cases and considered in the article of Mr. Lodge is that of compensation of expert witnesses. In none of the English cases cited in the above cases and in the article of Mr. Lodge did the question of what is expert evidence arise.

(1) 59 Ind. 1.
(2) 59 Ind. 15.
(3) Cen. Law Jour. vol. vi., 11.
(4) Southern L. R. vol. v. 793.

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The case of Lonergan *vs.* The Royal Exchange Assurance,[1] Collins *vs.* Godefroy,[2] Webb *vs.* Page,[3] and the later case of Parkinson *vs.* Atkinson[4], all involved the question of the value and loss of time, under the statute of Elizabeth,[5] which provided that the expenses of a witness, not within the bills of mortality, should be allowed pursuant to a scale graduated according "to his countenance or calling."[6]

The rule which prevailed at that time in the English courts, allowing compensation for loss of time to medical men and attorneys, was not based upon the character of the testimony to be given, but upon the value and loss of time. The character of the testimony did not enter into the question. Physicians and attorneys were, under this rule, allowed pay for their time upon a higher scale than other witnesses, though their testimony was concerning matters entirely foreign to their professions.

In Lonergan *vs.* The Royal Exchange Assurance, and Collins *vs.* Godefroy *supra,* though the question was not directly under consideration, it is suggested that this rule is a hard one, and will not stand the test of an examination. In Parkinson *vs.* Atkinson, *supra,* decided in 1862, the rule is approved, and the opinion expressed that it ought to be extended to state cases. Earl C. J. said: "We do not approve of the rule which is said to prevail in criminal cases, that if a surgeon is called to give evidence *not* of a professional character, he is only to have the expenses of an ordinary witness."

In Turner *vs.* Turner,[7] it was said by the Vice-Chancellor that the right of professional men to compensation was founded upon their being abstracted from their functions.

In Webb *vs.* Page *supra,* the rule allowing compensation for loss of time is made to depend upon the "distinction between witnesses to facts and a witness selected by a party to give his opinion upon a subject with which he is peculiarly conversant from his employment in life. The former is bound, as a matter of public duty,

(1) 7 Bing. 725, 727.
(2) B. & Ad. 930.
(3) Car. & K. 23.
(4) L. J. (N. S) C. P. 199.
(5) 5 Eliz. C. Q.
(6) 1 Greenlf. Ev., sec. 310.
(7) 5 Jur. (N. S.)

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to testify to facts within his knowledge. The latter is under no such obligation."

In Betts *vs.* Clifford,[1] in 1858, though a different question was under consideration, Lord Campbell made the same distinction between witnesses to facts and witnesses selected to express an opinion. He stated "that a scientific witness was not bound to attend upon being subpœnaed. If he knew any question of fact, he might be compelled to attend, but he could not be compelled to attend to speak to matters of opinion."

These cases show that the English cases, when the question of extra compensation to witnesses was made to depend upon the character of the testimony, made the distinction between witnesses to facts and witnesses called to express opinions. They do not, however, throw any light upon the proper legal meaning of the word expert when applied to witnesses or evidence. In the matter of Roelker in the District Court of Massachusetts,[2] it was held that one summoned to act as an interpreter could not be compelled to attend, and it was further said that the case of an interpreter was analagous to that of an expert. In the People *vs.* Montgomery,[3] in regard to the presence of Dr. Hammond in court as an expert witness, the court said:

"The District Attorney, it is true, might have required the attendance of Dr. Hammond on subpœna, but that would not have sufficed to qualify him to testify as an expert with clearness and certainty upon the question involved. He would have met the requirements of a subpœna if he had appeared in court when he was required to testify and given proper impromptu answers to such questions as might then have been put to him in behalf of the people. He could not have been required, under process of a subpœna, to examine the case and to have used his skill and knowledge to enable him to give an opinion upon any points of the case nor to have attended during the whole trial and attentively considered and carefully heard all the testimony given on both sides in order to qualify him to give a deliberate opinion upon such testimony as an expert in respect to the question of sanity of the prisoner."

(1) 1 Warwick Gen. Assizes. Philip Ev. 4 Am. Ed. 828.
(2) 1 Sprague, 276.
(3) 13 Abb. Pr. N. S. 220.

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Ordronaux[1] says that "whoever calls for an opinion from an expert *in chief* is under obligation to remunerate him, since he has to that extent employed him professionally, and the expert at the outset may decline giving his opinion until the party calling pays or agrees to pay him for it. When, however, he has given his opinion he has now placed it among the *res gestæ*, and can not decline repeating it or explaining it on cross-examination. Once uttered to the public ear of the court, it passes among the facts in evidence. * * * As a result of the foregoing conclusions it may be said that a witness who is called in an action to depose to a matter of opinion depending upon his skill in a particular trade, has, before he is examined, the right to demand from the party calling him compensation for his services, for there is a wide distinction between a witness thus called and a witness who is called to depose to facts which he saw. The same rule will by parity of reason apply to *personal service* demanded from experts as well as to opinions. Thus, in cases where coroners summon medical witnesses, who may literally know nothing of the causes of death of the party, to give an opinion, which they can not pronounce before making an examination, it is not obligatory upon them to make such examination until they have been paid for the same. They may even decline undertaking it altogether, as they would any other service."[2]

The above authorities show the same clear distinction observed in the English cases between facts and opinions. The question of compensation, however, is placed upon an entirely different basis in the American cases from that in the English cases. In the English cases, as before remarked, the question of compensation to professional men as witnesses was based upon the idea of the value and loss of time, and even in the cases where the character of the testimony was considered and the distinction made between witnesses to facts and witnesses selected to express opinions, the extra compensation was still based upon loss of time, though limited to witnesses called to express opinions. The American cases, while making the same distinction between facts and opinions and restricting compensation to witnesses called to express opinions, yet

(1) Jour. of Med., sec. 114, 115.

(2) Gaston *vs.* County Com. 3 Ind. 497; Snyder *vs.* Iowa City, 40 Iowa, 646; Redfield on Bills, sec. 146–155, note 46.

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base the right to compensation upon the idea of employment and *service rendered.* It appears to be well settled that in so far as compensation to witnesses is dependent upon the *character* of the testimony, it is allowed, both in the English and American cases, only for the expression of opinions *as for services rendered.*[1]

Now, an ordinary witness, as a general rule, is required to speak to facts, and is not allowed to state conclusions; only an expert is allowed to give an opinion.[2]

In Wharton's Law of Evidence, sections 434 and 436, it is said, "An expert has been defined to be a witness who testifies as to conclusions from facts, while an ordinary witness testifies only as to facts. This definition is not sufficiently exact. The true distinction is that the non-expert testifies as to conclusions which may be verified by the adjudicating tribunal, the expert to conclusions which can not be so verified. The non-expert gives the result of a process of reasoning familiar to every-day life; the expert gives the result of a process of reasoning which can be mastered only by special scientists. The rule that ordinary witnesses can not give conclusions, but must state facts, applies to experts in all matters as to which the lay mind is capable of forming conclusions, and as to all matters of free "logical inference from scientific facts."[3] "In this country, the practice is to confine experts, *as such,* to opinions connected with their specialties."[4] "It appears to be admitted that the opinions of witnesses possessing peculiar skill is admissible whenever the subject-matter of inquiry is such that inexperienced persons are unlikely to prove capable of forming a correct judgment upon it without such assistance."[5]

In Hamilton *vs.* Des Moines Valley Railroad,[6] it is said, "When the consequence of actions or combinations of circumstances may only be known by those familiar with the subject, and can not be understood by those not possessing such peculiar knowledge there-

(1) See letter of John Ordronaux to Dr. Hobbs, Trans. of Ind. State Med. Soc., 1878, p. 38.

(2) Indianapolis Gravel R. Co. *vs.* Chance, 32 Ind. 472; Nelson *vs.* Johnson, 18 Ind. 329; Sinclair *vs.* Bussell, 14 Ind. 450.

(3) People *vs.* Fernandez, 35 N. Y. 49; Noonan *vs.* N. Y. & Erie R. R., 21 Howard 88; Cook *vs* State, 24 N. Y. 282.

(4) Clinton *vs.* Howard, 42 Conn. 295.

(5) Falks *vs.* Chadd, 3 Doug. 157; Thorton *vs.* R. E. Assur., Peake 25; Mildowney *vs.* Ill. Cent. R. R., 36 Iowa 462.

(6) 36 Iowa 37.

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of, the opinions of experts are competent evidence. If the jury are able to draw conclusions as to results from facts in evidence, if they be of such a character that conclusions may be reached without skill and peculiar knowledge, the opinions of experts are not generally admissible."

It is well settled that any witness may be compelled to attend to testify to any facts within his knowledge that may be pertinent to the case on trial. There are but few exceptions to this rule, and they depend upon questions of public policy. The natural line of distinction, then, between non-expert and expert witnesses would appear to correspond to the line of distinction drawn by some of the English and most of the American cases upon which the question of compensation was made to depend—that is, the distinction between facts and opinions.

Definitions are not easily constructed, I know, but in the light of the above cases expert evidence, I think, may be defined to be the expressed opinion of a witness, regarded by the court as competent to express an opinion and permitted so to do, concerning the conclusion or conclusions to be drawn from facts shown to the court or jury.

In none of the cases in which the question is in any way involved has it been directly decided that an expert is entitled to pay for testifying to facts. The evils that would flow from such a rule are almost too manifest to require a moment's consideration; and yet there is a strong tendency in that direction, if, indeed, such is not the positive effect of the decision of the Supreme Court in Buchman *vs.* The State, *supra*, and certainly the arguments of J. L. Lodge, in his article upon "Property in Skill and Knowledge," lead logically to no other conclusion.

Notwithstanding the rule is recognized in Buchman *vs.* The State that a witness is required to testify to all facts within his knowledge, if the case is carefully considered it can scarcely be questioned that the court, by its decision, so draws the distinction between facts and opinions as in effect to except from the rule all the facts of the sciences, of the professions and of the arts upon which the skill of scientific, professional men and artizans is based.

The questions asked Dr. Buchman, upon which the decision of the court is based, are as follows:

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"State to the jury whether or not, in female menstruation, there is sometimes a partial retention of the menses after the main flow has ceased." (I suppose the word *retention* should be *return.*)

"What is your opinion, in case of menstruation, as to the menstrual flow changing in color, gradually, from red or dark to a lighter color?"

What would the answer to these questions be—facts or opinions? Certainly they possess none of the characteristics of opinions. There is no room for controversy upon this point. The answer to either of these questions would have been the statement of a fact; a fact, it is true, that the doctor acquired by study and professional observation, but none the less a fact. Not only so, but the answers to these questions are facts of such a character that not an adult female in the land, and not a few married men, but would have been as competent to answer as the doctor. True, in the second question, Dr. Buchman is asked, "What is your opinion?" etc., but to call a fact an opinion does not make it one. Suppose a medical witness should be asked to state to a jury how many bones there are in the fore-arm, would the answer be a fact? Most certainly! Well, then, suppose the question should be put, "What, in your opinion, is the number of bones in the fore-arm?" would the answer be any less a fact? Could the answer, in any proper legal sense, be considered an opinion? If it can, then the testimony of every tradesman, artizan and professional man, in regard to all matters of knowledge belonging to his trade or profession, which he may have acquired by study, observation or otherwise, must be considered expert testimony, and, under the decision in Buchman *vs.* The State, the party requiring such evidence would have to pay for it. Such a rule would be monstrous, and I suspect the Indiana General Assembly builded better than they knew when they passed an act that destroyed the effect of this decision. True, the law in the abstract was decided in accordance with the line of cases involving the question, but the court, having failed to distinguish between facts and opinions, in effect decided that every scientific fact in the knowledge of a professional man that was necessary for him, as a professional man, to know, and of which the court could not take judicial knowledge, but which would require the presence of a professional man to prove, to be an opinion, and the witness

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entitled to extra compensation for such testimony. Were this the law it would be difficult indeed to determine the limit.

In Ex parte Dement, Dr. Dement was asked to state the nature and character of the wound received and its probable effect. Dr. Dement had seen and examined the wound, and so testified, but when asked the above question, refused to answer, on the ground that he had not been paid for his professional opinion. After citing the English cases involving the question of compensation to professional men when called as witnesses, the court remarks: "It will be noticed that it has not been adjudged in any of the cases cited that a physician or other person examined as an expert is entitled to be paid for his testimony as for professional opinions."

"In general it happens that after all the direct facts of a transaction are brought before the court, a knowledge of other facts, not part of the dealing or of the affair between the litigants, is necessary to a proper understanding and decision thereupon. * * * * * * In these instances, persons who may be wholly unacquainted with the parties to a cause, and know nothing of the transaction between them, may be required to come from their offices and the care of their own important affairs into court to testify for the benefit of strangers in regard to matters in which they have themselves become conversant only by attending to their own business. * * * And the same principle which justifies the bringing of the mechanic from his workshop, the merchant from his storehouses, the broker from 'change, or the lawyer from his engagements, to testify in regard to some matter which he has learned in the exercise of his art or profession, authorizes the summoning of a physician or surgeon or skilled apothecary to testify of a like matter, when relevant to a cause pending for determination in a judicial tribunal. And if in the prosecution of an individual for murder it was proved that his supposed victim had, a short time before his death, drank something which he had received from the accused, and a chemist had analyzed the liquid and testified what substances it contained, and a physician was summoned to prove what effect that would have when taken into the stomach of a living man, and what would be the symptoms of such effect, no court would be excusable in exonerating the physician from giving such evidence solely on the ground that it would be a professional opin-

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ion for which he had not been paid or received a promise of payment."

The questions asked Dr. Dement called for his knowledge of facts he had learned in the pursuit of his business, and there is certainly no rule known to the law by which he could be excused from giving them when, in the judgment of the court, the administration of justice required it, and so the Supreme Court decided; but in so deciding the court did not draw the line of distinction between facts and opinions with any more distinctness than did the court in Buchman *vs.* The State. And while not departing from the line of decisions and authorities holding that gratuitous professional service can not be compelled without compensation, apparently restrict the rule, allowing compensation only for such professional service as *post mortem* examinations, surgical operations, etc., leaving it uncertain to what extent professional opinions based upon facts submitted can be regarded as professional service.

In The People *vs.* Montgomery, *supra,* the distinction between facts and opinions is very clearly drawn. E. D. Smith, P. J., in charging the jury, said:

"When a physician testifies in regard to a fact, you are to believe him just as you are any other man of equal credit. When they testify to a fact that they know from their study of diseases and their characteristics and tell what there is of the fact, you are to believe it. When they testify to opinions, it becomes a different question. * * * * * Everything that these physicians testify to as matters of observation, and by which they are able to tell you the characteristics of a disease, you are to believe as facts as you would otherwise. In considering their testimony, you will consider in reference to each statement whether it is a fact or an opinion; you will apply this rule to all facts connected with this case that are derived from the investigations of physicians."

In the article of Mr. Lodge, *supra,* it is contended that the professional man, as a witness, is entitled to compensation because of his "property in skill and knowledge."

Mr. Lodge supposes two young men, each possessing $5,000; the one becomes a merchant, the other invests his money in the acquisition of a professional education. Upon this he says: "We know that the merchant can not be made to bring his goods to

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court and bestow them gratuitously to assist in the administration of justice" because they are his property, and it is a fundamental law which provides for a uniform rate of taxation upon all citizens alike to assist in carrying forward justice, and no one man can be made to contribute more than his equal share from his property for such purpose. How, then, can you, without violating this fundamental law of property, make the professional man give up his skill and special knowledge without adequate compensation?"

Let us examine a little more carefully than Mr. Lodge seems to have done the relation of these two men to the state. The one has invested his money in merchandise, and is subject to that fundamental law of "the uniform rate of taxation" for the support of the state. He is also subject to that other no less fundamental law subjecting every citizen to the processes of the courts for the purpose of testifying to any fact in his knowledge which the court may consider necessary to a proper administration of justice, without any regard to how that knowledge was acquired. The other has invested his money in acquiring a professional education, and so escapes the fundamental law of taxation (which he ought not to do if "skill and knowledge" are in any proper legal sense property), and now stands before the court seeking immunity from the other no less important fundamental law as well. Where would be the justice in such a rule? True, Mr. Lodge admits that "all are required to come into court and state facts within their knowledge." He further says: "A scientific expert does not state facts; he gives opinions, he draws conclusions, he assists the court and jury the same as a lawyer does who takes part in the trial."

In the abstract this is certainly correct law, but what is Mr. Lodge's idea of the fact? Mr. Lodge would, in applying the law, as did the court in Buchman *vs.* The State, for want of a proper distinction between facts and opinions, exempt a professional witness from testifying to facts within his knowledge acquired by his study and observation in his profession. There is no question (leaving out of consideration the last act of the Legislature, in regard to which I do not express any opinion) that a professional, or indeed any man, is entitled to pay for expert services in court as a witness or otherwise, but the compensation must be "for *services rendered.*" As a witness it can not be for loss of time, for every

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witness must lose his time, nor because of any proprietary right he may have in the facts within his knowledge, for the law recognizes no proprietary right to facts.

It can not be a question of making "the professional man *give up* his skill or knowledge," but a question as to whether, being possessed of certain skill and knowledge, whereby he has ability to do a certain thing, he shall be paid for doing it.

It is not a question as to whether he shall be paid for knowledge, but for services valuable because of the knowledge. Call his knowledge "capital stock," or by what other name you will, in the language of Judge Stuart, "His professional services are no more at the mercy of the public, as to remuneration, than the goods of a merchant, or the crops of a farmer, or the wares of the mechanic." But as to facts, the same rule governs one as the other. There can be no rule that will excuse any witness from stating any fact he may know that will not apply with equal force to any other witness, and to any and every other fact within the whole realm of human knowledge.

It is not a question as to stating facts, nor *even opinions* that are *common* to any business or profession, nor of property in such facts or opinions, but a question as to whether, when facts are submitted to a witness and an opinion asked as to the proper conclusion to be drawn therefrom, any service is rendered in arriving at such a conclusion as will enable the witness to give an intelligent opinion, upon which the right of compensation can be made to depend.

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HARMONY AND ASSOCIATED ACTION

IN CONNECTION WITH STATE MEDICINE.

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Man, at best, like the wise king of Israel, when he surveys the prospects of the future, or gropes in retrospective the mazy labyrinths of the past, must arrive at the conclusion that "all is vanity and vexation of spirit." In relation to the world around him, he is a creature of circumstances; feeble and dependent as the ephemera of a summer's day, fragile and transient as a passing shadow. He shudders at the realities of the startling picture, and instinctively feels and admits that all his sources of pleasure, of happiness, of interest, whether mental or physical, are closely blended and inseparably interwoven with those of his fellow-beings around him; that the adverse pressure of the external world is such that it would be the height of folly and the desperation of a madman to attempt to stem the storms and tide of adversity unaided and alone.

The great and all-important inquiry, how shall I best add to my comforts and smooth the rugged path of life, and combat successfully the storms and frowns of fickle fortune? is a problem he most anxiously seeks to solve. It is clear that in the constitution of his nature he is essentially dependent and measurably helpless. It is clear that he is constitutionally and pathologically social and wonderfully sympathetic. Hence we infer that in order to promote his happiness, develop his resources of enjoyment, and accomplish the end of his being, it is essential that social and intellectual compacts should be formed, the domestic relations exist, families, communi-

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ties, neighborhoods, states and nations. The arts and sciences lend their aid to contribute to his physical comforts and enjoyments; ethics and revelation come with their mighty sanctions to mold, modify and direct his propensities and elevate his sentiments. He easily learns and readily admits that the precepts inculcated in the moral code, whether with relation to his God or to his fellow-man, are self-evident axioms, and that his own happiness essentially depends upon and is interwoven with that of his fellow in the same journey of life; but, unhappily, the regulations of society, moral and municipal, are so general and so broad that they become most lamentably too inefficient and feeble to accomplish the end desired. Hence the necessity of associations based upon reciprocity and community of interest. It is a fact to be deplored, yet not the less true, that the holiest and finer feelings of our nature—those which adorn frail humanity—generally have their beginning and date their existence in self-love, the ruling passion of all. This arises more from the conventional rules and regulations of society, which separate by their laws the interest of all in everything which affords an incentive to action, than to the perverse organization of man. It follows that whatever has a tendency to break down this barrier, by blending the interest of man in relation to all subjects that call into active existence the sleeping virtues of his nature, is productive of great good to the individual, and confers a lasting benefit upon the world at large.

In a world full of the means of enjoyment, overflowing, as it were, with the resources of almost universal happiness and prosperity, it does seem strange that disease and general misery should prevail. Yet the reason is obvious. We have perverted good in such numerous ways till it has become to us an evil, and thus converted intended blessings into innumerable curses.

We have erred egregiously in considering the evils of life as our misfortunes, whereas they are usually our faults. Many of those who assume to lead the public mind are perpetually talking about "the ills that flesh is heir to," as though such inheritance of evil was wholly arbitrary, unconditional and unavoidable. This is a sad mistake and leads to deplorable results, for it makes us in one sense practical atheists. Imagining certain evils to come or go according to the caprice of certain undefinable good or evil geniuses,

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without reference to any cognizable law or relation to any rational cause, we never think of averting or preventing them by intelligent conduct, and only endeavor to mitigate their violence when they actually overtake us.

In this way we blindly bow down submissively to, and become no better than worshipers of, the god Chance. Nearly all the sickness, pains, diseases and premature deaths which afflict humanity, and a vast majority of those accidents and misfortunes in life usually denominated "bad luck," are the direct consequences of our own errors, recklessly or ignorantly committed. They are the inevitable results of infractions of laws as fixed, as unalterable and as demonstrable as the law of gravitation. When human beings find their constitutional relation to these laws, which constitute the general Providence of the universe, they will have a remedy in their own hands for most of the ills of life. And to this end should we, as members of the noblest profession of the age, direct our energies and endeavor to educate the masses, to awaken energy and decided action in this matter, that furnishes him with knowledge which is to be used to a good purpose, that regulates the mind and accomplishes the man in such a manner that the business of life to which he is destined or which he has chosen is pursued with good to himself and good to others. This is the education which we consider the people require, as identified with our profession, and which, in our view, is to shed around us the blessings of professional physical and national prosperity.

Throughout the whole of the Creator's works we behold the most beautiful display of harmony. In every department of nature, whether animal or mineral, whether terrestrial or celestial, we find the principle prevails. From the smallest microscopic insect that lives and moves, to the largest world that rolls in the telescopic regions of space the laws of harmony extend. It is true that storms sometimes arise, and dark and angry clouds roll furiously up the heavens muttering wrath and vengeance and spreading confusion and terror around. But soon the lightnings are quenched, the thunder ceases, the clouds disperse, the sun shines, the rainbow appears and the storm ceases. Thus is exhibited to us the evidences that the storm, the lightning and the thunder are all in harmony to the Creator's attributes. If, then, harmony pervades all the works

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of creation; if it be an attribute of the divine character, and the source from whence creation derives its order and beauty, how essential it is that it should be cultivated by man; that it should be exhibited by him, not only in his private deportment, but in his intercourse with the world. Let harmony of thought and harmony of action ever characterize our lives. Without it we shall be unable to carry out the great objects of our profession.

But it is not in the familiar intercourse of life that the beauties and importance of this harmony alone can be seen. Its merits and excellence shine out most strongly when called into exercise by the unsparing hand of disease and death. Man, in full and vigorous health, when the tide of life courses ardently and proudly through his veins, does not lack for companionship; his resources are furnished him by the God of nature and his sanguine temperament laughs at despondency. But when the hand of the spoiler is upon him, when nature is overpowered by disease, he feels his utter helplessness and dependence. It is then that the kindly duties of the physician are felt and appreciated. Can this responsibility and attention be afforded with that pleasure and willingness which will reach the heart of the sufferer if there should be aught of unkindness or ill-feeling between himself and his patient? Then how important it is to cultivate the good will and harmony which we are required to preserve; important not only that we, as a profession, present an unbroken front to the world, but that we may also fulfill the sacred duties it falls to our lot to discharge.

The necessities and weaknesses of man, if not the very instinct of his nature, have led him in every age to seek the aid of his fellows, in order to overcome, by a combined effort, the difficulties insurmountable to a single arm. This necessity and weakness originated the principle of associations, or at least gave opportunity for the development of the natural instinct in which it has its foundation. By them it has been sustained, perpetuated and enlarged in the sphere of its operation until it has become the "lever that moves the world" Individuals found themselves involved in difficulties or beset with dangers which, single or alone, they could not resist or overcome, and they were thus led to form alliances with others for interest or defense.

Having found it easy, by a united effort, to overcome an enemy

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or meet and obviate a difficulty, they naturally enough sought to extend their power by extending the circle of their associated action. As in all associations some must lead and others follow, so the directing power began to concentrate, and thus what originated in man's weakness came to be his greatest power; in fact, the source of all human glory. The greatest nation, the most mighty empire the world ever saw, is but an association of individuals, and associated, too, because of their own individual weakness. By this all human progress and improvement have been effected. Happily the world is beginning to find an answer in the great principle of associated action—a principle akin to omnipotence itself. Let the bonds of union be strengthened and our lines extended, and the three thousand physicians of Indiana shall go on to new and more glorious conquests.

The medical profession can not afford to lose any time in advancing her interest and the interest of the commonwealth. There is no profession competent of doing more good than the medical, and no class of persons can advance the social, moral and physical requirements of the world more than the honest, faithful and intelligent physician. His duties are numerous, and as much is expected of him, and certainly much devolves upon him that is of vital importance to local, state and national success; and to accomplish those imperative obligations that will certainly revert to our good as a people, every aid and facility that will conduce to our success should be willingly and liberally extended. As I stated, our duties are numerous and responsible, but none are calling more vigorously or demand more consideration and aid at this time than that of State Medicine, and here, as in other matters of practical utility to our country's prosperity, the medical profession must lead the people to a better appreciation of those wants.

We have within our borders near two millions of people, actively engaged in the various pursuits of life. We have manufactured innumerable products, and are employed in the investigation of scientific truths of the highest importance to the human race. Such a people are entitled to the greatest consideration and attention, and in their behalf we demand such legislation and assistance as is most needed to advance her interest in all things pertaining to the physical, moral and intellectual development of our State.

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We are to-day one of, if not the mightiest nation of the earth. We are possessed of the finest country; having such a diversity of soil and climate, elegantly located with lakes and rivers, that it is quite impossible for us to have an entire failure of crops. Ours is the agricultural producing country of the world. We are always expected to have a supply on hand, and when any part of Europe is in need, no country can so readily respond with the desired assistance as ours. And if our progress is as rapid in population the next fifty years as the past fifty we will be almost as thickly settled as some of the provinces of the old world, and every foot of land that can be made available is destined to be of practical utility. It is estimated that we have fifty millions acres of swamp and overflowed lands in the United States. All along our Atlantic coast and far up the navigable rivers are vast tracts of salt marshes, or flat lands, abounding in fertility. In our Southern States are extensive tracts of swamps, which render, at certain seasons, the very air of heaven pestilential. In the New England States, also, in nearly every county, there is a considerable proportion of bogs and wet meadows among their almost barren hills, into which the uplands have for centuries poured treasures of fertilizing elements, but which are given over to desolation by reason of too much cold water.

Our state, according to the Auditor's report for 1878, has 1,256,430 acres of swamp lands. Along our rivers and streams, in every part of our state, are large tracts of low, flat lands, flooded in times of freshets, and at nearly all times of the year filled with cold or stagnant water. The time is at hand when steps must be taken to reclaim those lands that are not only useless for agricultural purposes, but, the noxious effluvia arising from the stagnant water, are deleterious to the health of the neighboring inhabitants. Such being the fact, one of the great requirements of our country, and one which will be generally adopted, is "Drainage."

To show the practicability of conducting operations of drainage, not only of marshes, but even of extensive lakes, in such a manner as to repay by the land reclaimed the expenses of the process, no better illustration is required than the draining of Haarlem Lake. An outline of the operation is well worth inserting in this connection. This lake was situated in North Holland and covered 40,000 acres, being 33 miles in circumference. Its bottom was more than 13 feet

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below the lowest tide of the bay into which it emptied. Such it was in 1839. Now no lake is to be found, but in its place, in October, 1855, what had been the bed of a great lake was then a region of exceedingly fertile land in a fine state of cultivation. It was dry, comfortable and healthy. Numerous neat, quaint and conveniently constructed cottages were seen in various directions. A population of about 2,000 dwelt within the polder, or tract below the level of the sea; fields of verdure extended far and wide, enlivened by cattle, horses and sheep grazing on the fruitful meadows."

Think of such a scene in the bottom of a lake, and a lake not in a well defined basin of solid rock or earth, but surrounded, in great part, by wet and marshy lands, so soft and spongy that portions of it rose and fell with the tide. The leading object in reclaiming this tract was not so much to subserve the purpose of agriculture as to prevent the dangers of inundation, the waters of the lake having once been driven by the wind over its banks to the serious injury of the city of Amsterdam, some miles north-east of it, and at another time, in the same year, 1836, the city of Leyden, on the opposite side, having suffered a like calamity.

The work was performed by the government at the expense of about $80 an acre. A canal of some forty meters in width, three meters deep, and six myrimeters in length was cut around the lake, a dyke was formed between the lake and the canal, and when all was ready the water of the lake was pumped out by steam engines.

It is estimated that the land thus rescued from the dominion of the sea is of twice the average value for cultivation of that of Holland generally. Upon this estimate, it is capable of supporting 70,000 persons, or double the present average population per acre of the two provinces of Holland.

The medical profession is cognizant of the duties that devolve upon her; but to accomplish the great and constantly increasing responsibility there should be harmony carefully compounded with our interest, and we should be governed thereby in the discharge of the many obligations incumbent upon us as physicians, husbands or fathers, as advisers or instructors. Many of us have been remiss in the discharge of our duty, thereby weakening our profession and retarding the operations of those who labor incessantly for its advancement. It will be objected, without doubt, that many do

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not act in full accordance with the principles they profess. Now, we wish from our soul that those who have this argument always ready would either acknowledge themselves incapable of reasoning or else fall sick of their own sophistry and cast about for something new. A profession and its responsibilities must be censured because some of its adherents are false to it! then the religion that Christ taught must be condemned because Judas was a traitor to it. Such is the argument that injures an enterprise from the conduct of some of those engaged in it. We are impatient when we hear such reasoning.

In a recent number of the Medical Record appeared an article on State Medicine and the Medical Profession. I quote an extract in this connection as not out of place: "In the states the importance of state and local health boards has already become widely appreciated. The influence of medical men and medical science is extending. It reaches where it never reached before, and it is rising to a prominence in political and social matters which is now becoming noticeable, and which every physician ought personally to appreciate and understand. This tendency is one which is both just to our profession and beneficial to the state. A venerable professor in a college in this city used to tell his students to shun political life. If by this it was meant to shun the life of a politician it was good; but it was neither public spirited nor wise to advise any class of persons to avoid politics. Certainly doctors should not do so, and if they would pay a little more attention to primaries and the political condition about them, they would not have to complain of the difficulties of securing the legislation they desire, nor would the influence of quacks prevail so much in the councils of our rulers." We repeat, then, that the profession must, for its own protection, take a more prominent part in public affairs and legislation. State medicine must yet form an important branch of state-craft, and the wider duties which this department of knowledge brings ought to be thoroughly learned and promptly assumed by us. It will not be many years before the great utility of state medicine will be associated with the idea of doctors, as close, perhaps, as is now the potency of pills.

It is a deplorable fact that we have in our country bogus medical colleges which sell diplomas. Some of those pretended institutions

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are headed by ministers of the Gospel. A profession so closely allied with the medical, and one that has received so much aid and benevolence from the physicians irrespective of denomination, that any of its members would engage in such nefarious transactions, is treatment that we ill deserve. Among the states that have established state boards of health, or enacted laws regulating the practice of medicine, are Illinois, Michigan and Kentucky. Ohio is making vigorous efforts for the passage of a bill identical in its provisions with the Illinois law that has been so effective in suppressing the practice of medicine by the holders of fraudulent diplomas and charlatans of every ilk. Indiana is in the center of those states, with freedom to do wrong. The vultures in human form driven out of other states (where they have no laws to protect them), will flee to Indiana as the state of refuge. What the medical profession of Indiana in association need and require is harmony and concert of action, demanding such legislation, applicable to all classes of the community, thereby promoting our interest and advancing the physical and intellectual development of our state.

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SOME OF THE UNSOLVED PROBLEMS

OF

PUBLIC HYGIENE AND SYNTERETIC JURISPRUDENCE.

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My subject embraces an embarrassing range of thought—a concatenation of subjects not strictly systematized in their presentation, all, however, diverging to well defined ultimate conclusions and unquestionable inferences.

If I do not misapprehend the logic of my deductions, I may hope to be able to outline to the votaries of public hygiene a more aggressive detail of operations.

We are now standing upon the boundary line of unsolved problems. Every thought in this department of inquiry that has been utilized in advancing the car of progress is awaiting the impulse of the solution of some perplexing mystery that retards its range of application in the accomplishment of its legitimate ends. The solution of unsolved problems is a signal to the advance guard of progress to march on and plant new mile-posts upon the highway of some special department of human progress.

To-day the human mind is busy in solving perplexing problems. Electricity needs the impulse of new ideas to widen the range of its utility; it is in the infancy of its mission; it shall yet be made to not only carry the words and the thoughts, but the picture of the human face, the exact likeness, must be sent around the world

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also. Aerial navigation must yet take us upon the wings of the wind to the remotest parts of the earth. All of nature's forces must be harnessed to unlimited appliances until the burden of human drudgery shall be removed from overtaxed energies, when it shall only be man's mission to direct, not yield, the forces of the world's industries.

We might name other departments of progress that will march on as the problem-solver signals the advance.

The evolution of public wealth, thought and movement is also awaiting the impulse of new ideas. It is conceded that public hygiene and sanitary research have developed and demonstrated more new and practical suggestions for the public good than any other enterprise that ever agitated the public mind. Notwithstanding this there are many localities in which but little interest is manifested in adopting its plans.

May I be permitted, Mr. President, to call the attention of this society to some of the hindrances that stand in the way of popularizing hygienic usages, to some of the unsolved problems that must be solved before we can move on to a higher stand-point in this the most essential enterprise of the age? In the first place, Mr. President, we must adopt some mode by which the knowledge that has already accumulated shall be applied to the accomplishment of the good it promises. This can not be done until we can formulate a law or set forth the principles by which judicious legislation may ripen our plans into mature enactments that will consummate the ends at which we aim, without infringing upon the rights of citizenship, burdening the people with taxes, or necessitating arbitrary demands upon the private household or trespassing upon the social relations of community.

Before this event can be consummated I have always contended, and time and experience deepens my convictions, that the first effort must be directed toward educating the public mind up to a point at which the masses will comprehend the necessity and fully appreciate the importance of the measures that we demand.

Among the questions that perplex hygienists and retard the march of the public health movement we can only mention the most prominent. Two will be all we shall have time to notice in this paper, besides the question of proper legislation. These are:

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1. *A healthful water supply.*

2. *How to prevent detrimental hereditary entailments of disease, vicious tendencies of character, and all the array of influences that are handed down from parent to offspring.*

I will bestow such thought as I can bring to my aid upon these questions in the order named, after first disposing of the question of public health legislation, which first of all claims attention. It has been, and is now, a belied question in legislative polity, and has been a stumbling-block for representatives and executives—not because it is hard to incorporate in a form of law the legal technicalities essential to the special requirements of any one accomplishment, but because the range of generalities is so wide, so many are the innovations upon popular customs and habits, and the entire accomplishment of the ends proposed are so at variance with the education of the people, that it has been found exceedingly difficult to utilize the self-evident good, the popular points of our argument, so as to neutralize that which is not apparent, therefore not understood and not popular. Hence, some of our states' health laws have been so unpopular that their most essential provisions have been unobserved to so great an extent that they have been inoperative, and have, in some instances, tended to increase the disposition of our law-makers to go no further in this class of legislation.

It can not therefore fail to be evident to each candid observer that we must abandon the idea of getting at any one meeting of our State Legislature an act embodying in one bill a thorough and efficient state or national law.

The coming law, as it may be proper to denominate that law, that shall be so happy in its provisions as to accomplish the wishes and meet the expectations of sanitarians and hygienists, and at the same time meet the approbation of the people, must, as I conceive, be the result of continuous, unremitting perseverance and patient experiment. It is futile to hope to formulate such a law and ignore the essential doctrine upon which all legitimate legislation for a free and an intelligent people is founded. We must not repudiate the principle that all power to govern is derived from the consent of the governed, that this power is inherent in the people by whom and for whom all laws are made. Our citizens are too democratic

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to approbate any legislation that is not the result of a popular demand, that is not sanctioned by the approval of the masses.

To accomplish this desideratum will be to solve the most perplexing question that stands at the threshold of utilizing the state synteretic knowledge now at our command. I have ever contended that the proper starting place is at the educational department, or rather by incorporating in some legal enactment a plan that will carry information along with the demands of the law. If this be not a legitimate conclusion I must acknowledge I misinterpreted the teachings of history and the logic of events. Inspiration comes to our aid with its wisdom if I have not suffered my prejudice to betray me in misapprehending its application to my defense. The people must know and understand before they can have faith in the necessities to which we refer them, and upon which we ask them to act.

When Paul said to the Romans, "Whosoever calls on the name of the Lord shall be saved," they stared at him in blank amazement; but he did not stop there, but said, "How shall they call on him in whom they have not believed, and how shall they believe in him of whom they have not heard, and how shall they hear without a preacher?" This statement and argument defines and substantiates the position I assume—that knowledge or education must precede or accompany our further efforts; public convictions must be ripened into their legitimate fruits before we can in any way popularize this movement or impel popular demand for public health legislation. Our people do not go it blind where there is any expenditure demanded, or any innovation upon their customs and habits. The popular literature of the day contains but little if any reading matter pertaining to this department of thought; indeed there are but few editors of secular journals or literary correspondents that possess the requisite information to lead the thoughts of the reading community to a safe mooring upon this great necessity. This is not said in ignorance of the great amount of learning these men and women possess, or in any disregard of the general good that is accomplished by their efforts. It is not to be expected that this class of literature should bring this kind of knowledge to the fireside of our homes. Until it is popularized, becomes interesting,

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then, and not until then, will there be a demand for such reading matter.

To obviate the difficulty so fully specified we must ask for a law declaring certain well defined sources of diseases to be a public or private nuisance, detrimental to the public welfare and subversive of the rights and privileges of the community in which they exist, and to make those who are responsible for such causes to abate them or be fined in such sums as will insure the observance of the law. By this plan a pecuniary consideration would stimulate or set the head of each household, landhold or proprietor to watching these occurrences and to investigating their influence.

That this plan may be easily inaugurated, and that all of its provisions may be easily understood, that no embarrassing litigation result therefrom, and unwarranted prosecutions result from technical constructions, let such a law as is contemplated be very plain, with a very uncomplicated state health organization at its head. The existing State Health Commission, which was organized by the State Society, and which never yet has cost the state one cent, will be all that is necessary as a foundation for an organization, and a law recognizing the existence of such an organization, and empowering it to enforce the observance of the law, will meet all the demands of the present and of the future.

The first work of this board, when put upon duty, should be that of furnishing blanks and forms for the use of the local work, to furnish for the use of the state for distribution among the masses a short, untechnical and easily comprehended statement of all the observances required by the law, and the reason for making such demands. This statement should be sent into every house in the state, and at the actual cost of preparation, so that no exorbitant charges could be exacted or speculation set up. All the literature that would be required in this plan could be supplied at ten or fifteen cents per copy, perhaps for less. The cost should be made light, and should be collected from those to whom furnished.

To facilitate the operations of such a law and bring its work into every locality, to systematize its appliances, and to enable the state commission to reach every house in the state, each township and each incorporated town or city should be included, and in order to obviate the objections that might be urged against multiplying the

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number of officers, the coroner could act as a commissioner for the county, township trustees for townships, and the health board of each city or town, which is almost universally organized by municipalities, could fill these offices. But this would thwart the purpose contemplated unless some standard of qualification was exacted of those who are to fill these places. The county health commissioner should give certificates of qualification to those who are competent to fill the office of township commissioner and others demanded for the county organization, and none who could not pass a proper examination should be eligible to such position. The county health commission should be approved by the state commission. This, in most cases, could be done by letter and certificates issued on the testimony of reliable recommendations. Is there any reason why a certificate of qualification should not be asked for? No man or woman can get to teach any public school in the state without a certificate from the duly authorized examiner. If this is proper, and I think it is, should our lives and the causes that affect our health and that of our families be intrusted to incompetent managers? I think no argument is needed to impress so plain a fact as this. What we want is to do well what is done—not formulate a gigantic system of generalities, undertake everything and do nothing well. Above all, place the work in competent hands. Each of the health officers above named should be a vital statistician within his respective jurisdiction.

Blanks for such reports as the state commission should exact, embracing a sanitary report of each jurisdiction and of special localities of such occurrences as might be deemed important, and for each officer a general annual, biennial or quarterly report, with a blank for families, should be furnished each year by the assessor. Upon these the deaths, births, marriages and number of days' sickness, and the disease with which afflicted, the prevalence of epidemics, any local or general cause tending in any way to influence the public health, and such other facts as would be deemed proper under the heading of remarks, should all be entered and reported upon. This should be filled out by some member of each family, fully and truthfully, or by the family physician or township health officer, but at the expense of the master of the house or premises. These should be taken to the township officer, who should tabulate

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them and send them to the county officer, and he in like manner to the state officer. This would place the state commission in possession of all the facts required to make a full, authentic report to the Governor each year, or at the meeting of the Legislature.

The plan of assessing certain fines and penalties on the violation of certain indisputable health-destroying influences would compel every one to look up such information as would enable each person to understand the law, the ends aimed to be accomplished by it, and insure a thorough observance thereof. Should any one be disposed to violate such a law, any one should be allowed to report the same to the authority having jurisdiction over him. Upon complaint being made, setting forth the character and extent of the offense, the health officer should inspect said offenses and assess the proper penalties, and charge the costs, which should not be exhorbitant and should be fixed by law, to the offender. Charges for such duties, perhaps all other expenses of the entire organization, could be paid from such funds as might be collected from fines and penalties. These should not be attached to any but the plainest offenses, such as are well known to be destructive of health, such as can be prevented by ordinary care and attention, such as keeping wells, springs, cisterns or other water supply sources in a filthy condition, too near to privy vaults, stables, cow sheds, pig sties, chicken houses, and other filth-producing out-buildings, allowing surface water charged with the washings of decaying matter, slops from the kitchen, wash-house, and the leaking of sewers, etc. Persons keeping damp cellars charged with rotting vegetables under the house where the family sleeps, should be fined. So should the allowing of ponds and pools of stagnant water during the hot summer and fall months, if the same can be drained, be forbidden. Piles of offal from stables, or surface scrapings should not be allowed in or about the house enclosure, or in close proximity to public highways. In short, whatever is notoriously offensive or disease-producing should be abated by reasonable fines. Offensive or injurious trades or callings should be taxed, and should not be allowed within offending distance of dwellings or public highways. Machine shops in which human beings are employed, if they endanger life or health beyond the ordinary pursuits of life, should be taxed or fined. Also public conveyances that notoriously endanger human life by bad construction, bad repair or improper

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management should be fined. Some trades or callings should be taxed in a reasonable amount, such as that of selling nostrums, patent or proprietary medicines, that claim to be a cure for all diseases, that are sold at from one to five hundred per cent. profit, such as have not the formula of its composition on the bottle, which the public is induced to purchase by forged letters, names and certificates, and are not put up by men who are qualified either to treat disease or to compound medicine. Therefore they are all a palpable fraud, and each bottle, box or package should be taxed in proportion to the justifying circumstances. On each such bale, bottle or package that is sold, the amount taxed shouldbe paid into the public health funds of the locality where sold, unless the correct name and proportion of each drug which enters into the composition of the remedy is pasted on each bottle, bale or package.

I have not time here, Mr. President, to enumerate all the specifications of the details of the law referred to. The plan of such enactments and the principles upon which it is founded are, I believe, correct, and if put into operation it will insure the progress of public health work, and that its operation will render its accomplishment apparent and its demands and exactions popular. I do not arrogate to myself undue legislative wisdom, nor shall I pretend that my plan is the very best one that human wisdom can devise; but I shall adhere to it from honest conviction until some better one is presented. I find, Mr. President, that some of the wisest men in this work are turning their thoughts into a similar channel, and I feel much complimented that the progress of synteretic legislation and the direction of thought on this subject sanctions the correctness of opinions I have long entertained.

I must drop this subject to refer to the first unsolved public health problem, as a science, to wit:

I. A HEALTHFUL WATER SUPPLY.

This can be obtained, as I verily believe, only from the rainfall from the clouds, by proper gathering, careful cleansing and preserving. Water is a solvent for so many substances, is so easily contaminated by impurities, that it is only to be found pure in the chemist's laboratory. It is true it is distributed by nature, evaporated from the earth and the ocean and drifts in mist up to where

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the cool air condenses it into clouds, but in this process it is charged with ammonia and particles of matter that float upon the wind, so that it becomes charged, to some extent, with foreign matter. This is more particularly true when it descends in raindrops. The snow and hail are not alike exposed, as they are frozen beyond these influences, unless charged as it ascends. When it falls upon the earth or house-tops, it comes in contact with insects, bugs, dust and particles of wood and coal, that are carried up flues and fall back upon the house-tops; so that we have to contend with perplexing difficulties in getting it sufficiently pure to be reliable as a family supply. Nothing is so abundant, nothing so essential to all forms and states of animal existence, nothing so easily soiled by the touch of impurities, nothing that can be burdened so much and in such a multiplicity of forms, as water. It is the great carrier of morbific elements and nutriments to build up the functions of animal and vegetable life. It freights off the detritus, supplies and empties life's reservoirs; it is life's greatest blessing, and the instrument of its greatest pests. Pure, it is life; polluted and foul, it is death. Nothing on earth so fully typifies a soul made pure by the blood of the Redeemer, nothing so near like the home of the blessed, as pure water. When John the Revelator went out from Patmos with a heavenly vision, he saw a river of pure water proceeding from the throne of the eternal God, along the banks of which grew the trees of eternal life.

When the decree of Jehovah was announced in Eden, "Thou shalt surely die," the seeds of disease and death were sown upon its waters, and the tide washed along its dreadful crop with the march of human footsteps. It is asserted, and the assertion is substantiated by evidence, and illustrated by experiments, that a very large proportion of the most deadly disease-producing elements are conveyed into the system by water, that it is essential to the production of malaria, it is the nursery of some forms of contagion. When the air around is charged with humidity, or dwellings are damp, it tends to produce or aggravate many forms of the most fatal and torturing maladies in the catalogue of human ills. It plays so important a part in all of life's relations that we can not be too earnest in our efforts to obtain it pure. What is demanded at the hands of hygienists and sanitarians is some practical plan of accomplishing

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this result, how each household shall be furnished handily, cheaply and surely with a plentiful store of potable water in country, city and village. When we take cognizance of the amount of water that is usually allotted to each individual, for all purposes, in every twenty-four hours of life, it may appear quite embarrassing to accomplish this end. A careful estimate of this amount has been made, and it is set down at thirty-eight gallons, on an average, for each member of each family. In this country a much larger amount is supplied in most cities. New York offers to each inhabitant the liberal amount of one hundred and thirty-eight gallons. England varies its supply in different cities. Windsor offers sixty-three gallons per capita, while Norwich only supplies seventeen gallons. Germany also has a variable standard of supply. Carlesruhe gives each person one hundred and fifty-seven gallons, whilst Ascherlaben only gives them about enough to cook their meals, to drink and wash their faces every other day, being only fourteen gallons. When we contemplate what a vast amount this allowance would be in the aggregate in such cities as New York, London and Paris, we can but wonder what potent influences for evil it must exert if contaminated with organic matter. And when we look at the innumerable contaminating influences that exist in these crowded metropoles we can not fail to appreciate the difficulty of obtaining this supply from rivers, wells or springs uncharged with detrimental influences.

It has been demonstrated by the research of competent and trustworthy committees that the majority of wells are unsafe to be trusted for water supply. It will be found, by reference to the reports of the State Boards of Health in Massachusetts and Michigan, that nearly two-thirds of the wells, the water of which was examined and reported upon, contained elements tending ultimately to affect injuriously the health of those who used from them. This is certainly a showing well calculated to excite alarm and call for an effort to remedy, in some way, the evil. How, Mr. President, could other results be expected from the manner of their construction and their proximity to prolific sources of contamination? Many have no walls but the earth through which they are sunk. Those that have brick, stone, wood or earth, water-tubing or iron pipes, it is difficult to conceive how any of these can prevent surface washings from getting in through seeps, through the earth di-

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rectly, or by seeping through porous tubes, or by running down iron pipes and entering at the bottom. Most of them are not more than from twenty-five to thirty feet deep. To that depth water will percolate through the earth to come in with the current from which the well is supplied. The tops of most wells are not secured from the wash and slops around them. They are almost invariably within such distances from privies, from stables, wash-houses, pig sties and hen coops that they must be influenced by them to some extent. Cellars are often charged with water saturated with decomposing elements, which finds its way into the well. Kitchen slops, sewage vaults, drain pipes, and other inlets for impurities, are so numerous that we look with fearful apprehension upon the result when we estimate their consequences upon the origin and spread of epidemics and wasting scourges.

As we have evidence beyond contradiction that wells are an unsafe source of water supply under present management, we must look to the next popular source, which is river water, and here we are met with accumulating difficulties; and as the tendency of well water will be to get more impure as our population becomes more crowded, so will all of the sources of river water pollution grow in like ratio. Into the rivers are emptied the washings from the surface, where it comes into contact with decaying matter of every denomination, in every stage of decomposition. The refuse of manufactories, the contents of sewers, the offal of slaughter-houses, street gutters and seep drains from grave-yards are all poured into the common stream, made up from inland tributaries charged with solutions from manured lands, rotten roots, worms and insects. As these sources of pollution meet and blend, their union might, with approximate propriety, be denominated the grand army of pestilence marching against life's forces. Some have contented themselves in the belief that rivers purify their waters by various modes of filtering and by running over gravel and sand, but the report of the royal commission appointed by the Health Department in England to investigate the facts connected with the pollution of river water, also a similar commission appointed by the State Board of Health in Massachusetts, and other committees on river water as a suitable source of water supply, demonstrated the fact that water charged with sewage can not be purified by any mode hith-

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erto tested; that water may be clear, sparkling and palatable, yet contain the germs of typhoid fever and perhaps many other diseases; that fatal and widespread epidemics have been caused by the excreta from typhoid fever patients thrown into a river forty miles above.

Those who have investigated this subject can call to mind the instances given in proof of what has been asserted of the small amount of contaminating influences that is required to poison water, a leak from a sewage pipe, and tributaries coming from a section where the soil has been saturated with discharges from diseased persons, or from drains from such districts—seven grains of sewage matter of this character are enough to pollute a gallon of water. Less than that is dangerous if constantly used.

The presence of very serious disease-producing influences may not be detected by any measure of bulk, specific gravity, or by even the most careful chemical analysis. It can only be destroyed by heat. One eminent author says, that if water polluted with sewage poison were filtered through sixty miles of chalk the poison would still adhere to it or some influences of it. These facts being before us, and this truth being indisputable, is it wise to look to this source for a healthful water supply? Is it not criminal to water our wives, our children, our fathers, mothers and friends from a source so fearfully hazardous as water from cities, towns and villages from the same stream into which are emptied privies and every species of filth, as in the city of London when she was visited by a desolating scourge of Asiatic cholera? Such water is but the washings of man and beast—but a liquid manure, a stream of accumulated disasters, the pantemorphic touch of which is the touch of death. There is but one other source left, and that is rain-water. No intelligent gentleman will doubt this being the purest water that nature supplies. It is true, as has been stated, that it may be lightly charged with ammonia, and on falling upon the housetop it may meet with slight impurities, but it may be filtered in such a way that it is, after well arranged filtering, almost absolutely pure, if it be filtered before it goes into the cistern, and the cistern be so constructed as to keep it pure.

Nature teaches a lesson in her operations that it is not wise to disregard. She re-purifies the water by distillation. That is used

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in watering the leaves, the fields, and that with which she revives the beautiful flowers and re-purifies the waters of the earth. Were this process not performed the world would become a barren waste, decay and putrefaction would usurp the empire of animate existence. It would be like letting the disintegrated particles of the human blood remain in the blood to poison the pabulum of life. Shall man, with all of his intelligence, with the vast resources and marvelous inventive genius at his command, not profit by the teachings of an all-wise Providence, and intelligently utilize the treasures of pure, sparkling rain-fall to water his excessively impressive vitality —gather it up, take from it the impurities it has incorporated in the process, and carefully store it away in clean reservoirs? It is not necessary to store away large quantities at one time for potable purposes; as the rain-fall is, on an average, forty-two inches annually, it must be apparent that any house large enough to shelter a family has enough covering surface to catch enough water to supply its essential demands, at least for drinking and cooking meals, and to always have it comparatively fresh. Even in crowded cities this can be done, and in some portions of Europe and Asia they use canvas, which is stretched upon poles something like tents are stretched, and a large amount of water is caught upon this contrivance and conveyed into vats and cisterns. This can be kept clean and taken down and put up as required. Among some of the uncivilized tribes of men the bark from trees is used for the same purpose. In the deserts of Africa and some other tropical countries, where it rains but seldom, and where there are no springs or but few water courses, and no wells, nature has caused the pitcher plant to spring up, which catches in its arms a good supply of water, closes it up from evaporation, and keeps it safe for the use of some thirsty man or beast. All this teaches us to imitate the wisdom it manifests. A cistern sunk well into the ground, made water tight and secured from every inlet of water, always kept clean, together with a well-arranged filter, certainly is the best that can be done or even required.

Some time since my attention was called to what is denominated Gates' self-cleaning cistern filter. I was much interested in hearing of an apparatus that promised to accomplish the great desideratum. I therefore ordered one to be sent to me for inspection. I am much pleased with the theory upon which it is constructed, and so

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far as I am able to judge by a mere inspection, I have no hesitancy in recommending for it a fair trial, and if it should accomplish what its inventor claims it will, and what, from appearance, it promises to do, I think the whole problem of purifying rain-water is solved. It is cheap, simple in construction, easy to use and to keep in repair. I hope, Mr. President, that the members of this society will examine the filter, and that, if it does not accomplish the ends we so earnestly desire, it will lead the mind of some one to one that will. I have letters from trustworthy gentlemen in Cincinnati who have tested it, and who pronounce it a magnificent success.

I shall have no further time to bestow on this problem. If the facts brought forth do not solve it fully I trust it will induce a departure from the custom of using water from wells so faultily constructed and so filthily surrounded, and from river water known to be the receptacle of every character of polluting tendencies, that it will be the cause of more thought and investigation upon this highly important inquiry.

The next unsolved problem is: *How shall the evil results of hereditary transmission of disease, deformity, mental and moral decrepitude and evil tendencies of character and disposition be disposed of by public health organizations?*

This interrogatory is the sphinx of social problems of all ages; the zero of biological research. The wide-spread curse of popular assuetude, the evils of baneful hereditary transmission luxuriate sub silentio in the speculative theories of modern propagandists, and in the inferential dogmas of scientists. Could this problem be practically solved and the solution utilized, it would be as salutary as the brazen serpent that Moses raised up to cure the bite of the serpent, the infliction of which was certain death. Shall there come no hope to cheer the well-founded forebodings of the growing influences of this evil? Is there not enough love for the rising future to impel an earnest effort to stay the march of invalidism, disease, deformity and insanity that come down from parent to child as regularly as cause and effect? Shall we behold unmoved the sowing of unbridled passion, the brutish appetites, mental, moral and physical degeneracy broadcast along the stream of prospective manhood and womanhood? Shall all of these evil tendencies be thrown into life's current to drift on to the future and to raise up

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again in multipotent manifestations of degenerating tendencies. If so, great God! what a heritage of curses is to descend to make the history and influence the events of this vast country. Many of those who shall march up to fill the places we shall leave vacant will lament the existence they must endure, burdened with the infirmities of their ancestors. Some of them may even curse the hour that gave them a life of inevitable affliction. Will not the future historian write of us as we are taught it shall be said of sinners in the day of judgment, "You knew your duty, but you did it not?" Shall we await a verdict that shall heap curses upon our memory, and that we have a chance to avert? Shall we march down to the future in robes stained with blood? Shall fear of popular favor swerve us from a duty so sacred? Shall we stand still and see disease, deformity, insanity, unbridled passion, unrestrained evil impulses, loaded upon the young lives that are to rise behind us? Shall there be no organized effort to avert the inheritance of the consumptive, the syphilitic and other physical diseases that are unquestionably handed down from parent to child? Also the tendencies to hand down such misfortunes as that of being deaf and dumb or blind, as well as disease of the mind, vicious habits, dispositions and tendencies of character, etc.? Are these varied ills which have been planted in the human organization by some of its violated laws in the past to remain, and the same curse to be repeated and their effect intensified, accumulate to widen and deepen? Shall physical degeneration, idiocy, mental aberration, inebriety, pauperism, prostitution and syphilis, the offspring of criminal indulgences, retard the march of future manhood and womanhood, thwart their accomplishments, impede their progress, tax their resources and prevent the accomplishment of their exalted destiny? Shall we listen to the popular plea of extenuation embodied in the cant of enervated conservatism, "Oh, how can it be avoided? Who can help these things? How can anything be done? Has it not always been so, and will these evils not be ever visited upon us as a penalty of our first parents' sin?"

The blubbering politician will hide himself behind popular prejudice and tell the public that these visionary schemes of the doctors will infringe upon the sacred rights of our social relations. If occasionally you meet with a well informed medical gentleman who

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is disposed to censure those who bring these questions so often before the tribunal of public sentiment, the Fanfaron, if I may apply a rather obsolete cognomen to the ranting, superficial pretender in medicine, who joins to the pleas already mentioned the assertion that all that the regular medical profession wants is self-protection, office and public notoriety, and that all progress in legislation upon what pertains to the preservation of life and health is for the purpose of preventing competition and to form a medico-legal monopoly; that such enactments as are demanded to accomplish the ends we propose are calculated to trample the sacred rights of the household under foot and to subvert the operations and spirit of free institutions. I have thus heard these prating imposters, who grow fat off the blood and tears of the afflicted, whose sphere of operations depends upon their ability to popularize prejudice against those whose acquirements have fitted them to take the name of physician, and to widen the range of superstition and ignorance and pamper popular credulity.

Let us not permit these causes to swerve us from the sacred path of duty. Hold the facts that are at our command up before the people, point them to demonstrations of the statements and arguments we offer them, array the operations of degenerating influences in families and communities, show them the withering blight, the wasting touch of syphilis, that it is pushing its polluting impress into almost every family in the land. The most truthful statements I could make, with any regard for veracity, with reference to the extent to which this loathsome disease prevails, and of its ultimate effect upon the public health, would be pronounced by those who have given the subject no thought, wild, unfounded conjecture. It will not come far short of overreaching the credulity of the most sober and the most earnest searcher after facts upon the subject to believe the statistics and the opinions of Professor Gross, as reported to the American Medical Association, in a very learned and elaborate paper upon this subject, to which I refer those who may wish to look up these references.

We can not fail to arrive at simular conclusions if we will take the trouble to estimate the influence of twelve thousand houses of ill-fame with their forty-eight thousand prostitutes, which are vis-

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ited by one hundred and sixty-seven thousand men and boys every twenty-four hours, a very large number of whom become hurt with that fire whose wounds never heal. Take this army of syphilitics out into their different spheres of operation. See them become husbands and fathers, those who are not such; look upon their offsprings with the death blight upon their young lives. Follow them! See some of them fall from the cradle into the grave. See others with eyes festering out, throat relaxated, limbs paralyzed, joints anchylosed, with stumbling, faltering gait, with form stooping beneath the pressure of vital depressants, with impetuous temper, unrestrained appetites impelled by passion under the buffetings of abnormal emotions and blunted moral impulses. Will you allow me to ask this society to look upon the wasted, wronged and misdirected lives of those who are the offsprings of syphilitic parents, who pass beyond the terrible chances of death in infancy and childhood up to take their places in society.

One of the wisest of men said that "He that begetteth a fool doeth it to his sorrow, and the father of a fool hath no joy." The wide range of the word fool as here used covers many shades of character and conditions, and is used to illustrate the evil that must result to parent, offspring and community from bringing into existence one whose life has no points of good. When this was written the human mind was directed to a matter that should have been written upon the heart of every parent from the days of Solomon till now. Science and observation have demonstrated beyond question that much of the invalidism is inherited from parents. The one most wide-spread and disastrous of them all is that to which we have referred. This is not only hereditary, but is seldom, if ever, eradicated fully from the system. No one who has had in his system secondary syphilis should become a parent.

That desperate scourge of our race, consumption, is known to be transmitted from parent to child; it is also known that the deaf and dumb, the blind and the insane, exert an influence upon their offspring of sufficient magnitude to increase the number to an alarming extent.

We build institutions for the treatment and for the education of this class of our citizens. The mantle of public charity is sufficiently ample to cover all of those who have been rendered helpless

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and hopeless by the decrees of Providence. We assess taxes upon our industries to maintain almshouses for paupers, to build prisons for the murderer and the thief, to keep up courts to litigate the disturbing causes of the public peace; yet we make no effort to investigate and remove the causes that make such exhorbitant exaction necessary. The hospitals that are required to obviate the well-known influxes of hereditary infirmities is no small amount of the public demands.

The number of inebriates that swarm every avenue of society, the well-known hereditary character of this morbid appetite, with its predisposing influences to produce new or excite old morbid manifestations, arrays before us one of the most alarming conditions of our social status, one of the darkest sins of governmental toleration. This cause tends to produce results that fill our community with every shade of crime, the most revolting and the most demoralizing in its influences upon public morals. Inebriety co-operates with that unwarranted sensuality that originates and spreads the syphilitic taint and kindles the passion that consumes all moral restraint, and stunts all sensitiveness to the impression of duty that man owes to God, to man and to his country. If these conditions would remain stationary and never increase, if they could be now checked, we might, by industry and economy, bear the burden of taxation they impose upon us, and by husbanding the vitality that yet exists in our manhood we might resist the enervating influences which have already taxed it so heavily.

When we adopt the logic of unalterable decrees and accept the lessons of experience, the ratio of increase of all this terrible crop of degenerating, demoralizing, burdening influences struts before us, and this ultimate magnitude stretches down through the long years of the future, growing like the downward course of a stream, deeper and wider.

Mr. President, will you think it wrong to ask the members of this society to make an estimate of the final number of consumptives that will be the offspring of twenty thousand now having that dreadful syntetic blight in their system? Then double that number for those in some way tainted with syphilis; then double that number for an estimate of the army of those who drink intoxicating drinks to excess; add to these the deaf and dumb, the blind, the in-

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sane and the vicious; then take into consideration the other invalidism, deformity, idiocy, etc., that are being multiplied by procreation; throw all these influences into life's stream, then let me ask how long will it be before the entire vitality and mentality of our race feel the wasting influence of these multigenerous impulses at the usual rate of increase of proclivous and uncongenial matrimonies; how long will it take to degenerate our race, to lower the status of manhood and womanhood? No member of this society will doubt the consequences of unchecked hereditary transmissions of the conditions referred to, nor will I do anyone the injustice to believe him favorable to such results.

How shall we commence a reformation of customs, habits and usages that will mature such a public sentiment as will be utilized in accomplishing the work? In the absence of a better plan I would commence at once to warn those who have our confidence of the impropriety of marrying in families afflicted with any detrimental hereditary tendencies. Point them to illustrations of the ruinous effects of such an impropriety. Leave all these facts, with the weight of their decrees, before the tribunal of public sentiment, whether they be popular or unpopular; whether you meet the buffetings of morbid sentimentalism and be pronounced a visionary utopian or not, let duty impel you to a higher accomplishment than that of a time-serving inefficient. It matters not. We must rise higher or we will inevitably sink lower. There is no high or low water marks along the stream of progress; there is no standard of vital ethics by which to increase our manhood or the accomplishment of our enterprise in a hundred years from to-day. Accept no measure, and multiply the good or evil influences that determine certain results.

For some years I have used my influence against marriages that I was certain would be sorrowful to the wedded. Not long since I received a very kind and approving letter from a gentleman who was one of the parties who had asked my advice as to the propriety of his son marrying a young lady whose mother was my other client in the case. I promised them to study over the matter after they should send me a more full history of the families. After giving the subject a very full investigation, I wrote them a full statement of the facts and advised them to let the matter go no

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farther. They had promised to abide my decision. I felt complimented at being the umpire before whom such important questions should come. I was glad that one step had been taken in the right direction. I could not wrong that dear girl by advising her to become a mother, and force-march her to the grave. I could not advise that young man to mix his life with the seed of death, and become the father of one who could give no promise of either life or health for any very long time. Notwithstanding they had the fullest confidence in my honesty and competency to give proper advice, the marriage went on. I told them fully of what might be expected; but notwithstanding this, the wedding party met, friends congregated around the altar to offer their congratulations, all pronounced the match a charming one, exactly in accordance with the wishes of all the friends and the hearty approval of the neighbors. Two years and a little over one month from that time death came and severed the ties so recently made. The mother is in the grave. A little pale, delicate girl, a leaf touched by the winter winds, survives its mother. The father will soon be alone again to either buffet life's storms in loneliness, or seek other relations. Would it not have been better had this wedding never been? After all this had happened I received the letter I have referred to. It came from the father of the bereaved young man. With the approval of the mother of his buried wife, they thanked me, and reminded me that what I had written had almost exactly come true. But the advice was asked too late. Never wait until marriage vows are exchanged. Then it is too late. This is but one of the many cases that are being acted upon in the same way, with the exception that but few ever ask the counsel of a proper judge. These matrimonial misfortunes are ever before us. In addition to the personal influence of the medical profession, other aids must be elicited. The wise and the good of every profession, every walk of life, will add votaries to the denfense of so wise a suggestion, so essential to the public good. There is now being agitated the propriety of formulating some plan, and of systematizing some effort to organize societies ostensibly for the purpose of elevating the status of the physical, moral and intellectual manhood of our society. The plan suggested, and upon which I understand there are some incipient organizations which are of a secret character. Whether it be best

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they should remain so, or be public and open to inspection and public scrutiny, I shall not here pass an opinion; but they are formed upon unwritten but very strict laws, and very exact conformances are required. I am informed that each member is required to undergo a very scrutinizing inspection by some competent examiner; that no one is allowed to marry in or out of the organization unless it be approved by the examiner of the society to which the parties belong; the object being to improve the health and build up families of superior organism, and of a higher grade of physical endurance and mental capacity. This is to be done by judicious crosses, congenial tempers and temperaments, together with such other observances as the best judges and the best authority shall think proper. Should such an effort be put into successful operation under the sanction and protection of the law, in a century hence it will be so fully manifested upon the character of our people that certain families will be notorious for some branch of excellence. It will be remarked, as it was in the days of distinguished families among the Greeks and Romans. The old world has its royal families, from whose sons are born their kings and queens. No country on the globe has such opportunities as this to build up superior families. We have the best blood and brain of all nations to combine with the native stock. Shall we not give to history our race of invincible captains, our celebrated orators, statesmen, mathematicians, inventors, musicians, jurists, physicians, divines and operatives, our long-lived, even-tempered families? Shall we not be able to boast of beautiful women, well developed men? Have we wasted our energies beyond redemption in breeding geese and pigs, sheep, cows and horses? Shall not the medical profession blaze out a path leading beyond the bounds of popular inquiry and the commonplace usages that hang upon the wheels of progress, and plant new mile-posts, away out on the highway, of urgent and essential demands of the age?

I need not tell you, Mr. President, nor does it gratify any personal ambition of my own, to say that the medical profession must be the headlight of the car of progress in this movement. We have too many evidences in the history of medical men of sacrifices of wealth, of station and of ease to advance the public welfare, for

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any effort on this occasion to vindicate the worth of their sacrifices or to exult in the glory of their accomplishments.

It might not be amiss, however, to ask your forgiveness for diverting the thoughts of the members of this society from the more practical questions of the healing art that come so often in the path of duty at the bedside, to a vast field of almost impracticable accomplishments. My plea of extenuation is, that duty demands at our hands the right at all hazards and at any sacrifice a near conformity to the precepts of the Great Physician, who went about doing good amidst the tumult of opposing elements. It is in conformity with the teachings of the great and good men who have left their lives behind them to formulate a guidance for our footsteps that some one of our number should turn the current of public attention into this channel of thought and attempt to avert the inevitable tendencies of the accumulating influences of detrimental hereditary transmission, which, unchecked, will sow upon the future, as the past has upon the present, tares of mental and moral degeneracy and physical infirmities upon the harvest field of our race. That no one shall be justified in pointing to this subject as one that the medical profession was too conservative to bring before the public mind and identify their efforts with the reform it demands, I have determined to make it a feature in the paper I have prepared for your consideration, that it shall not be truthfully said that this essential reform of the age is the *opprobrium medicorum.*

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WOMEN PHYSICIANS

IN HOSPITALS FOR INSANE WOMEN.

MARY F. THOMAS, M. D., RICHMOND.

The attention of this association is called to this subject because we believe interest is being manifested by the public in favor of the employment of women physicians as the attendants of insane women in our county and state hospitals for the treatment of such patients, and because we believe the comfort and recovery of insane women would be promoted by having the medical attention of properly qualified physicians of their own sex, and, in attempting to write this plea for the admission of women physicians to the place spoken of the thought comes to us very forcibly, why should women have to plead with men for the privilege of administering to their own sex when insane—the condition that appeals to all that is skillful, to all that is humane, to all the advantage that science and philanthropy can bring to bear in mitigating the woes and relieving the sufferings of insane women. Are not women the natural care-takers of women in sickness and distress, even the uneducated and untrained for the work? Then why should not women physicians be allowed the privilege of caring for this unfortunate class of women?

Many of these insane are mothers. Often helpless children are left at home who need their care, and that fact may aggravate the disease and render the patient more peculiarly suited to the professional care of physicians of her own sex, who know from ex-

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perience how to reach feeling in that class of patients, and use its influence as a means of restoration to health.

We are very glad to note the fact that public sentiment in regard to the moral treatment of inmates of all the institutions of the country, penal, reformatory and curative, is demanding a higher tone of government, less coercion and more cultivation of the principles of intelligent manhood and womanhood, all of which exert a beneficial influence on the deranged condition of the mind, and have their share in "attuning the jarring senses" and leading them on the pathway of ultimate recovery, and the leaders in the public charities and other benevolent institutions are associating on their board of managers men and *women* both, and each find their respective places in the work, and the result is in the highest degree satisfactory.

We do not ask to monopolize the treatment of the insane, nor to make any great change in the government of the hospital, but simply make the very reasonable request that insane women of our state be placed in the medical care of women physicians. This phase of the subject has been discussed and its peculiar fitness advocated for several years by many of the intelligent people in different parts of the state. A few years ago application was made for the appointment of a woman physician as an assistant in our State Hospital for the Insane, but the powers that be said no. Still insane women were sent to the hospital as before. Two years later a petition, numerously signed by intelligent women of Wayne county, was presented to the Governor of the state, asking that women physicians be employed to care for insane women, but the Governor had not the appointing power. From time to time different members of the legislature have expressed themselves favorably to the proposed change in the management of insane women, but nothing tangible has been brought before them, and consequently no definite action could be taken.

Though this proposition commends itself to every interested observer, yet we ask your attention to some further consideration in connection with it. In the times that are past it would not have been right to criticise too closely the practice of having men physicians in hospitals for the insane, as there were not then women physicians in this country competent to fill these responsible posi-

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tions. But that objection does not obtain at the present time, nor during the period that we have spoken of when application was made for the appointment of women, as there were then, as well as now, women physicians fully qualified for the position of assistants in the hospitals.

Last year again application was made for a situation as assistant in a hospital by a woman, a graduate of Indiana Medical College. Her application was endorsed by a number of leading physicians, but again her request was refused. Some objected because she was not an old, experienced physician. Allow us to ask if assistants in hospitals for the insane are always old, experienced physicians? On the contrary, we find that quite young men graduates are often appointed, and we submit the question whether a woman who has had years of experience in practice and takes special interest in this branch of the profession, even though a recent graduate, may not be as well qualified for the position as young men graduates, who can not possibly have had much experience in that direction?

But it is not the object of this paper to make comparisons, and we only introduce the above because it seems called for in the premises.

Another reason why we did not press this question at a much earlier date was because women were not acknowledged as physicians, were not admitted to medical colleges only in isolated cases, and did not enjoy the professional recognition that was essential to base a claim to these appointments. But *thanks* that the liberality of the age has stamped its progressive spirit on the members of the medical profession, and they have endorsed and aided this advance movement by admitting women physicians as members of our county, state and national medical associations. And it is not an unimportant part of this argument to note the number of state medical associations that have admitted women physicians to equal membership in their bodies—California, Indiana, Michigan, Illinois, Iowa, Kansas, Maine, New York, New Hampshire, Ohio, Vermont, Oregon, and, I believe, Massachusetts, and from several of these states representative women physicians have been received as delegates and members of the American Medical Association—

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from Illinois, the first in 1876, and Indiana, with several of the eastern states, in 1877, at the annual meeting at Chicago.

Then, with this statement of the professional position of women physicians, what objection can there be to permitting women taking another step, when that advance is so eminently indicated by the very fitness of things?

In conversation a few days ago with one of the most intelligent members of the State Medical Association he remarked: "It is a very important move, and I should think it would commend itself to every physician who gives it a thought." It is well known to the profession that many of the diseases peculiar to woman, organic and functional development during her menstrual life and the years of maternity, and the murderous practice of this age to destroy the physiological results of this period in woman's life, all of which, being a fruitful source of insanity, call for a change of treatment, even if some masculine M. D. is displaced from a lucrative position.

In corroboration of this, we have the testimony of some of our most able physicians. Dr. Bucknell says: "There can be no doubt that uterine disease constitutes one of the most frequent causes of insanity among women."

Dr. Blankford affirms that the sympathetic connection between the brain and the uterus is plainly seen by the careful observer. But it is not necessary to multiply arguments, as this is admitted by physicians of large experience and candid observation.

Then comes the force of the argument that I wish I could impress upon every one who hears me to-day, and which every one of you know to be the fact, if you give it the careful, honest thought that is the duty of physicians, that women physicians can have more freedom of communication, more unembarrased means of diagnosis, can reciprocate the delicate sensibilities that pervade the minds of insane women from these causes, and, where their womanly sensibilities have not been blunted by male interference, can reach them with medicinal and hygienic instrumentalities that men physicians, however skilled, can not do. There is no time in an insane woman's ravings, when her language and habits may be disgusting in the extreme, that prevents a woman physician from entering her room, and in the recurring exacerbations of the disease, women, educated and refined by the knowledge that they carry in their pro-

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fessional acquirements the balm for the physical sufferings of their patients, combined with their intuitive, characteristic perceptions as women, that none but women know, and none so cheerfully and conscientiously accord to these unfortunate victims of insanity, the unlimited and unrestrained endeavor for their relief that they have a right to expect from any educated woman physician, who assumes the responsibility of relieving and curing the unfortunate women "whose reason is dethroned," and consequently not responsible for any departure in conversation or conduct from the rules of propriety that society throws around the association of physician and patient. Especially is this true of those cases of insanity caused by uterine diseases, where careful, discriminating physical diagnosis is essential to the correct understanding of her condition, and then, as a consequence of this disease, the gynecological treatment indicated is peculiarly the province of women physicians, and the propriety of their practicing it is undoubted; while it is known to every physician who has had experience in treating insane women that there are frequent occasions when the condition of the patient is such that even the *almost unlimited* license that society accords to the man physician will not warrant him in overstepping the strict proprieties that prevent their examination, and, in the language of a lady, in the situation above referred to, who was a patient a number of months in the insane asylum, "they let them quietly slide along, hoping they will recover."

One of the oldest eastern superintendents, Dr. Bancroft, of New Hampshire, says, "No one would be more thankful than myself for better facilities than are at present afforded in investigating and treating these cases." The trustee of the Hospital for the Insane at Mount Pleasant, Iowa, where a woman physician has been employed by them several years, says: "Experience has confirmed the conviction that a female physician, with proper qualifications, can accomplish a vast amount of good in such hospitals." While we are informed that one of the most eminent alienists in Pennsylvania, and one long connected with a hospital for the insane, has on several occasions "requested eminent female physicians to take charge for a brief time of patients in his institution, to gain their confidence and to ascertain their physical condition, that a proper treatment could be instituted by himself."

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In addition to the arguments already presented we refer to some appointments that have been made in hospitals for insane women. The first one of which we have any knowledge, was Dr. Mary Stinson, assistant physician at Worcester, Massachusetts. I believe this was in 1869. She was there five years, to the satisfaction of those interested. Since her resignation she has spent several years in visiting similar institutions in Europe to acquire information of their management.

The second one appointed was Dr. M. Abbie Cleaves, assistant physician to the Hospital for the Insane at Mount Pleasant, Iowa. The appointment was in 1873. She resigned in 1876. As an evidence of her worth to the work, she is now one of the *trustees* of the same hospital. Her successor in the hospital was Dr. Jennie McClernan. She was successful in her appropriate practice.

Last June Dr. Julia Cary was appointed assistant of the Hospital for the Insane, at Danver, Massachusetts, and, in the last annual report of the trustees of the hospital for that institution, they say, "the appointment of a lady physician on the female side, a departure from custom hitherto observed, has, for a short period, been a move in the right direction."

October, 1879, Dr. Eliza B. Phillips was appointed at the Hospital for the Insane at Mt. Pleasant, Iowa, in the place of Dr. McClernan, who resigned on account of failing sight.

In October, 1879, Dr. Helen M. Bizzellat was appointed assistant physician at Kalamazoo, Michigan, and is appreciated by those who see the necessity of the appointment. We learn that at a recent investigation of the management of the Hospital for the Insane at Kalamazoo, Michigan, which is regarded as one of the best managed in the United States, the committee made several practical suggestions, from which we quote the following recommendations: "That at least one female physician be appointed in the female department of the hospital for the insane."

The fact that the hospital at Mount Pleasant has appointed three women physicians successively is a strong argument in favor of the movement, *they* having had opportunity of knowing their adaptation to the profession in this capacity.

Dr. H. B. Wilber, of the Asylum for Idiots, at Syracuse, New York, writes that a bill was introduced in the legislature of that

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state last year making it obligatory on the trustee of hospitals for the insane to appoint women physicians in the female department of every hospital. The bill passed the house by a vote of 75 to 24, but was defeated in the senate. The question was very earnestly advocated by Dr. Wilber and many other medical men of eminence in the profession, as well as county judges and superintendents of the poor in nearly all the counties of the state, because of their familiarity with the state asylum and their ability to judge of the propriety of the measure advocated in the bill.

Even the Utica *Herald*, in a measure the organ of the Utica asylum, though it opposed the measure in the main, admits the *whole*, by saying, "many arguments may be urged in its favor."

The friends of this bill intend to renew the fight next legislative session. They feel that all the arguments opposed to it are fairly offset by the unqualified endorsement and "approval of medical men of equal professional standing and more liberal principles."

The State Medical Society of Pennsylvania, at their last May meeting at Pittsburg, appointed a committee to take the matter into consideration, and they secured the passage of a law by the legislature authorizing trustees of hospitals for the insane to appoint women physicians to have charge of insane women.

Mr. Lamberton, one of the trustees, residing in Harrisburg, went before the committee of the legislature himself and aided much in securing the passage of the bill. The law goes into effect in June next, when three of the hospitals of Pennsylvania, one old one and two new ones, are intending to place women physicians in charge of the female wards, and Dr. Hiram Carson, chairman of the committee, and also one of the trustees of the State Hospital for the Insane at Harrisburg, writes that he has reported the names of several women for the situation of principals on the female side, one of whom will be chosen. The other two, Warren Hospital, in the northwest part of the state, and the Eastern Hospital, are both nearly ready to receive patients, and both will begin with a woman physician chief in the female department.

Then we understand that there are eighty public hospitals scattered over the country, besides a large number of private institutions for the cure of the insane; and in all of these institutions women patients constitute about one-half of the whole num-

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ber, and that the number of permanent recoveries have *diminished* twenty-five per cent. in the last forty-five years. Since the elegant and costly hospitals have taken the place of the comfortable simplicity, amid which Drs. Wyman, Todd and Woodard prosecuted their labors, in the language of Pliny Earl, M. D., it becomes the scientist, the political economist and the philanthropist to look about them and devise some means to remedy this evil.

Dr. Storer, of Newport, R. I., said, fourteen years ago, "There are signs that a great reform in the treatment of the female insane, for which we have so long been laboring, will at no distant day become accomplished," and this statement from one who is recognized as authority, both in this country and Europe, has a significance which we should all understand. In the small number of hospitals that have employed women physicians, and the subordinate position they have generally occupied as third assistant, no definite idea can be formed of the status of results, but so far as the record has been obtained they have been satisfactory. But we are not blind enthusiasts in the movement. We do not expect perfection in the management to be brought about at once, even if women physicians could be admitted to all of our hospitals for the insane, as it takes time, patience and experience to work out all material changes essential to the success of this great enterprise of public charity, that has been constantly extending its borders, and its friends have been looking for improvement ever since Dr. Woodward and Miss Dorothea L. Dix began their long and successful investigation and amendments in the care of insane fifty years ago; and as both sexes are represented in the subjects that are cared for by these institutions, the government, to be conducted on the rational principles of society, should alike call into requisition the mental and moral nature of both men and women, allowing them to occupy the same scientific and physiological platform to which their respective capacities and qualifications entitle them.

It is beginning to be recognized by some of our most clear-headed and thoughtful observers that the nearer the healing institution can be made to represent the *family*, the more successful will be the treatment of those who are brought from the family hearthstone to the hospital for medical treatment, and as few families have the accommodations for their restraint if unmanageable, hence hospitals

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for the insane are a necessity, and in all of these white men and women are alike admitted as inmates, we ask that competent women physicians be employed to treat the women patients. Abundant proof can be brought to them that women have proved themselves fully competent to manage disciplinary, philanthropic and curative institutions in every department of the work in our state; and this fact is well known to those who take pains to inform themselves in regard to the matter, and we see no valid reason why this responsibility should stop at the threshold of the hospital, where all the arguments in its favor apply with a two-fold emphasis.

In the preparation of this paper I am under especial obligations to Dr. Hiram Carson, of Pennsylvania; Dr. M. Abbie Cleaves, of Iowa; Dr. Wilber, of New York, and Mr. B. Sanburn, President State Charities, Massachusetts.

In conclusion, gentlemen, I respectfully offer the following:

Resolved, That the President appoint a committee of five members of this body to memorialize the next meeting of our legislature and ask the modification of existing laws governing hospitals for the insane; or, if necessary, enact new laws that shall authorize the appointment of women physicians for the work of insane women in the hospital under the control of the state.

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SANITARY SURVEY OF INDIANAPOLIS.[1]

TOPOGRAPHY AND SURFACE GEOLOGY—WATER SUPPLY—DISPOSAL OF EXCRETA, CELLAR AND YARD FILTH, ETC.

THAD. M. STEVENS, M. D., INDIANAPOLIS, IND.

Indianapolis is situated in Marion county, Indiana, with the West Fork of White river flowing in a southwestern direction, upon its western boundary. Several streams traverse the county, all having a southern direction. Upon the west the two Eagle creeks, flowing southeast and emptying a little below the city into the river. Upon the east, commencing north of the city, we find Fall creek, then Pogue's run and Pleasant run, with Bean creek still farther south.

The mouth of Fall creek, where it empties into White river, is at the northwest limit of the city. Its course some distance up is tortuous, and in cases of freshets its waters overflow the low banks and inundate a tract of land several acres in extent. Formerly its surface water flowed by a bayou from the northeast to the southwest, through the center of the city near the line of Illinois street, to White river. A ditch has been dug to straighten, in some degree, the creek immediately above its mouth, but as often as the overflow occurs, water is left in the old bed below and upon the low grounds adjacent, forming, in fact, a kind of swamp, or at least having moisture enough to invite that species of vegetation which, upon dying and being exposed to the sun, causes malaria.

(1) The points of sanitary interest contained in this paper applies to other cities of the state as well as to Indianapolis, the variation caused by difference in topography and 'surroundings' being considered.

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Pogue's run, farther south, runs in a southwestern direction through the city, a little south of its center. Formerly it contained a variable but still sufficient amount of water to carry off all detritus or offal that might gain access to it, and the only harm was caused by the overflow of its banks. As the forests have been leveled, thus diminishing moisture, and the various bayous or natural drains that flowed into it from all sides been filled or diverted by sewers, etc., scarcely enough water passes along its bed to entitle it to the name of "creek," and only at times of freshets is there enough to wash out its slightly inclined channel.

Pleasant run, upon the city's southern limits, flowing southwest, has had its supply of water diminished in the same way as Pogue's run, and in a few years it will be the receptacle of as much filth from manufactories, privy vaults and general surface drainage as the latter stream.

The flow of all these streams is such that they empty into White River at points within or not far from the city limits. This conclusively shows that Indianapolis is in a basin, the grade higher upon all sides than is the site of the city, except where the river makes its exit from the south-west.

The rock underlying the city is of Niagara limestone. It is found at a depth of seventy-five to ninety feet from the surface, which is of the "drift" formation.

Within the limits of the city, and upon the east and southeast border, is found an elevated ridge, of from ten to twelve feet in height, composed of tenacious clay, with "pockets" of sand scattered through it, below which is a layer of bowlders and gravel. This seam of gravel, in other parts of the city, is six to twelve feet from the surface, and rests upon blue clay or marl, from one to three feet in thickness. Within this gravel seam and above the blue clay is found the first stream of water, which is simply a sewerage stream; from this the supply of water, as obtained from wells, is taken.

Below the blue clay (which is impervious to water) is found another gravel bed, and in it, at about forty to sixty feet from the surface, the second stream of water. Then again an impervious blue clay, then gravel, and at the depth of seventy-five to ninety feet the third stream, resting upon the rock. All these under-

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ground streams of water have a gradual flow to the southwest, the same as White river. The natural surface drainage is from the south and southwest to Pogue's run and the river, but on the north, by means of sewerage, a portion could be drained to Fall creek and a portion south to Pleasant run. The proper route for drainage of the southern and eastern part of the city is by way of Pogue's run, and sometime in the future this stream will flow through a main sewer. The western portion is drained, as it should be, as nearly along the course of the ancient bayou that in times past emptied its transient waters into the river a little below the present site of the water works.

In addition to the large bayou mentioned, that formerly carried off the surplus water of Fall creek, there were several others, notably one running from the north, south to Pogue's run, crossing Washington street at New Jersey street, and another from the east, and entering the run near Virginia avenue and Alabama street.

The geological formation of the beds of all these bayous differs somewhat from the adjoining ground. The order given above of tenacious clay upon the higher, and loam upon the lower portion, with sand, gravel, hard-pan, etc., in succession, gives place in the "beds" to a rich black loam or "muck," that runs from twelve to twenty feet to the gravel seam, on the heights to the southeast, holding the first water stream and resting upon the impervious blue clay, the "muck" being evidently the washings from the land drained by the bayou and left to settle after each spasmodic filling of its bed by the transient water.

The first bed of gravel we have mentioned, that contains the first stream of water, is of great benefit to the city; it acts as a drain for the subsoil, and where the soil is porous and only of moderate thickness nothing is needed farther, in the way of drains, except for the variable surface water. Where the soil is compact clay and of great depth, as in the eastern and southeastern portions of the city, subsoil drainage is necessary so the water can be replaced by air.

WATER SUPPLY, ETC.

One of the most important questions to be considered when speaking of preventable disease is the water supply of a people. Death may lurk in this all prevailing and important element, and

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we not know it; or, if its dangers are known, no adequate remedy can be proposed.

Not only has the topography and geology in general to be studied, but local variations, for what will supply good and pure water at one point may fail to do so at another. At Indianapolis, for instance, we have, as stated, three streams of water underlying the city, all flowing to the southwest. Whatever the second and third streams are, the first is a sewer, contaminated with the surface washings of the city, and wholly unfit for potable uses. It can be used, but great risks are taken, and nothing could prevent the dissemination of the subtle poison of typhoid fever, cholera, etc., throughout the community by this source, should the opportunity offer.

Wells, in such places, should be banished, yet they are the principal sources of water-supply to all the citizens, cistern water being so palpably foul and offensive, *as commonly found,* as to deter from use. As the majority of the inhabitants of the country are dependent either upon wells or cisterns for their supply, and as a large percentage of such are but the reservoir of the most impure water, it is important that knowledge of the danger thereto attached should be disseminated.

THE REMEDY.

But there should be a remedy suggested for every evil shown to exist, and we think there is one for the troubles we have mentioned as efficacious as it is simple. There is no new principle involved, for it is merely a filter; nor is it new in application in this form, but it is not fully adopted, nor is its success as a remedy acknowledged. We have before described it, but this paper would be incomplete without a repetition. The material to be used is "front" brick. With these a vaulted chamber is formed, resting upon the bottom of the cistern. This chamber may be of from two to six barrels in capacity, the vault to be built in form of an old-fashioned bee-hive. The brick are laid in cement, but none is applied to the surface. The water flowing into this vault is rendered clear and sweet. The pipes from the pump enter this filter, the point of entrance made tight by cement. Water will continually fill the vaulted chamber; each stroke of the pump partially exhausting it, will facilitate the flow, so that there is at all times a sufficient supply

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within the filter. Since we resorted to the expedient mentioned, we have had no trouble whatever. It is true we never conceived the idea that the brick would exclude the germs of cholera, typhoid fever, etc., but we would rather risk this filter than any other to separate all that can be. It is true that while rain-water, caught in cisterns from roofs of houses, avoids a number of the impurities necessarily associated with that obtained from wells or streams near cities, still a certain amount of impurities gain access to such cisterns from the atmosphere and the washings of the roof.

Only a small amount of such impurities are of an organic nature, and only a part of the organic matter is held in solution, the remainder, except a very small per cent. of dissolved mineral matter, is in suspension. All held in suspension is separated by the brick filter we have described, but the organic matter (though comparatively small in amount) that after prolonged maceration is held in solution, can not thus be separated perfectly. So, as a matter of safety, the cistern should be cleaned once a year, at least, of the material that has gained access to and lies upon the bottom of the cistern, outside the filter.

In principle it would no doubt be better to have all impurities, entangled by the water from the roof, separated by filtration before going into the cistern, and, indeed, this can be done, but in any case we should build the cistern with the filter as described, for practically the outside filtration is difficult of application under all circumstances.

If a portable or fixed filter be used outside of the cistern, and it is not so arranged that it is cleansed of the foreign substance, it would, of course, in a short time be useless; and unless such arrangement is automatic, it will seldom answer the ends intended, for to rely upon the housemaid to see that the principle is carried out is as unsatisfactory as to suppose she will remember to so arrange the "shut-off" of the down pipe that the first dash of water holding the roof washing would escape into the sinks instead of the cistern. If the latter always were done there would be little difficulty in obtaining pure water even without filtration, but we know it to be practically impossible. If a properly constructed outside filter can be attended to, we would recommend it in conjunction with the brick one, described before, and among all we

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have ever examined we think there are two or three that would answer a good purpose, and embodying true principles; the only trouble is, as we have intimated, in giving them proper attention.

We deem cisterns holding collected rain-water, filtered as mentioned above, as the best means of supply for household purposes that can be adopted for universal use, and can imagine but few possible objections to their adoption. One of these is the supposed impossibility, in certain cases, to obtain a sufficiently large collecting surface to permit an adequate amount being caught. It has been estimated that with a rain-fall of thirty inches, and a collecting surface of sixty square feet, that a supply sufficient for the use of any ordinary family could be obtained. Of this we are certain, for it is a matter of experiment.

One objection urged against cisterns is, that lead being the best, and in many cases the only material that can with any degree of safety be used as water conduits, and as distilled water is supposed to act thereon, so that the fluid is impregnated with a poisonous material, therefore, when such pipes are used, cisterns filled with rain-water are not proper modes of supply for household purposes.

In answer to this, we know that rain-water is not chemically pure, but contains a trace of salts; that this will in a degree protect the lead from the action of the water, we believe, but that no harm results from such action we are convinced. If we place a sheet of lead in water exposed to the air, an oxide may form, yet we are convinced that in the relationship existing between a lead pipe and water in a closed cistern, any action, even if the water should be distilled, would be at a minimum. No action would take place within the pipe, and no great amount of oxide would in any case be formed upon the outside, where ordinary rain-water is used. After years of use of such water, supplied by lead pipes, we are certain no dangerous results will occur.

This mode of filtration, used in cisterns, is applicable for the country or city. It also can be applied better than any other to purify water that may be furnished to large cities by water works.

River water is frequently contaminated by surface drainage. Various amounts of organic matter is found, and this always, in some degree, unfits it for use as a beverage.

It is admitted that if it were not for the purifying element of

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oxygen contained in the water, whereby new and less deleterious compounds are formed, it would not be safe to use it at the point of contact with large cities, where the inhabitants obtain their supply. It is asserted, and generally accepted as true, that a few miles from the source of contamination the water is rendered pure by oxidation. We venture to doubt this, at least in the absolute sense taken by many, for a great part of this sensible disappearance of river pollution is due, we think, in many cases, to dilution alone.

No city should take its supply from any body of water in its immediate neighborhood, and into which the sewage of such city is discharged. The risks of contamination are too great. In these views we are supported by a large number of authorities.

A certain city of over eighty thousand inhabitants is supplied by waterworks from a deep well, dug upon the banks of an adjacent river, the water from which is supposed to filter through the sand and become pure; but the water thus supplied is found, upon analysis, to contain as much organic matter as that of many of the wells in the city that were examined. The water in this case, as well as where reservoirs are used, could with ease be passed through a vaulted chamber, built as we have mentioned, before distributing. This water should not, however, unless taken from a point above the city, be used for *drinking purposes*, the filtered rain-water being alone pure.

In the city we speak of, the water taken from the well is, during fires especially, mixed with the foul river water, taken from a point within the city's limits. Even this, if filtered through the vaulted chamber described, or through several of the forms of best outside filters now coming into use, from its suspended impurities, is not fit for potable use.

If the water needed on extra occasions, such as fires, was taken from up stream we would have no hesitation in recommending the water-works supply as good potable water *after* filtration.

The inhabitants of cities that are supplied by river water by means of water works, often know not what they drink, and may at any time suffer from the effect of impurities taken into their systems.

Five or six years ago the City Council ordered the Board of Health to make analysis of water from the river, canal, that sup-

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plied by the water works, and wells in various parts of the city. The writer performed the work for the person employed by the board, and remembers that as far as the organic matter was concerned there was not much difference in amount contained in water from the water works and that from the most impure of the well water, and that river water differed materially, according as it was taken from a point within the city limits, or a distance up stream, the amount being much less in the latter. The water from one well that was used for household purposes was found to contain as high as one and a half grams of organic matter to a half decaliter, partly in suspension and partly in solution. Others have detected still larger amounts. Potable water should contain at least only a trace of organic matter. This will not obtain with any water taken from shallow wells or rivers near a city, even though it be filtered until it is perfectly clear, for the amount of organic material that is dissolved, and that can not be detected, except by chemical tests, will amount to an abnormal number of centigrams to the decaliter.

In addition to what we have said, as to the pollution of streams from which potable water supply is often taken, we remark that until tainted with the "*debris*," that accompanies population, not much harm need be feared from such water if it be properly filtered.

The supply for New York from the Croton, many miles from the populous city, was a source well conceived of. How different is the supply for Indianapolis! Taken from a point where not only the surface washings contaminate the shallow White river, but also the "sewage stream" adds its filth.

Other cities are in the same predicament. Even Chicago, with its tunnel reaching far out into the lake, and thus obtaining a supply of supposed pure water, is in danger, if it has not already come, of having the water flowing into the mouth of the tunnel rendered impure by the floating particles of impurities cast by sewage into the lake in the vicinity of the tunnel.

That Indianapolis can be supplied with comparatively good water taken from the river or well sunk above the city's limits is true. In addition to this source of supply, practical use can be made of wells sunk to the third stream. With both those sources, in addition to that of properly filtered rain-water, no lack of good water need be feared by the citizens of Indianapolis.

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The source of impurities of well water are various; among them are surface drainage, percolation from vaults, cesspools, etc., and admixture of sewage.

In Indianapolis the first alone would be sufficient to render the well water impure, for not only the filth that is daily cast upon the ground often washes into the wells directly, but it is carried there by percolation through the soil.

A well will in this way drain an area in diameter from two to three times the depth of such well, and though some of the organic matter may be changed by oxidation, etc., while passing through the soil and some taken up by rootlets to nourish vegetation; still, more or less of it will gain access to the first stream of water. Even if all vaults were banished we would still be fearful as to the use of well water for potable uses.

With occasional exceptions, the privy vaults are shallow holes in the ground of various depths, some a few feet, others going to the first gravel bed. They are walled with hogsheads, barrels, curbing, or brick, and in all cases the contents find access to the water streams that supply the wells. Those that do not reach the gravel will often overflow. The debris floating upon the water that fills them is scattered over the yard with well known bad results. A vault should always reach and enter to some distance the gravel seam, so that the fluids shall be drained off. This, of course, makes the gravel seam a sewer, and the first stream acts as a "flusher."

We see at once that taking a supply of water from such a source is nearly the same as tapping a sewer and taking the household supply from that. This fact is certainly well recognized by those who advocate the building of vaults shallow and cementing them, and removing their contents frequently. They wish to prevent the water being polluted from such a source. In theory this is a remedy, but practically it does not answer the purpose, for they do not take into account the vault already built, nor yet the surface drainage above spoken of, either of which still keeps the water impure. While we would not object to the plan of rendering vaults water-tight by cement, we still think that such mode should not be adopted in expectation that it would protect from harm those who use well water. This will not be the case. Vaults reaching into the underlying gravel bed, thus insuring sewerage of its fluid contents,

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properly disinfected by dry earth, etc., and properly walled with brick, are not hurtful, and are farther removed from being a nuisance than are sewers as commonly built, provided we do not depend on well water for potable use.

Therefore let us cease digging shallow wells, resort to cisterns with the filter as described, and dig vaults deep enough to enter the underlying gravel beds, walled, but not cemented, and have their contents often properly disinfected. If this plan is followed it will be far cheaper, more healthful and so simple that all can understand it. It will therefore be practicable.

VENTILATION.

It is, no doubt, true that Indianapolis lacks many of the hindrances to true sanitation incident to "over crowding" as found in compactly built cities. How long this shall remain a fact is a question, but even as we find it now there is room for improvement, especially the construction of private residences and public buildings. We do not know how many of the former are erected with reference to proper ventilation, but we suspect but *very* few, and as to churches and other public buildings we know them to be woefully deficient. In summer, especially when the weather is suitable, there may be plenty of air circulating by the way of windows, etc., but in winter scarcely a church, theater or public school-house, as costly and magnificent as they are, is safe to remain in for any proper length of time, the number they are capable of accommodating being present, even with those built in accordance with the latest recognized true principles. Such principles are seldom carried out so as to practically secure the ends intended. If a central ventilating shaft is built it may be too small, and the pipes entering it from the room or rooms, are not of sufficient capacity, or the draft, from other causes, is deficient, etc.

It may seem to be a heinous crime or bold ignorance to speak thus of costly and elegant buildings, where either the parents or children congregate for amusement or instruction, buildings erected under the eye of good architects; but ever and anon the facts, palpable to the few, become apparent to the many. They feel something is lacking; they chafe and criticise, but are silenced by the frowns of the press or the assertions of the builder.

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That there are practical modes to remedy much of the evil we speak of is evidenced by the fact that some have adopted the true principles and carried them out in a practical manner. The intelligent sanitarian should be consulted equally with the skillful architect.

CELLAR AND YARD FILTH.

In addition to the topography, water supply, proper mode of excreta disposal, drainage, etc., which we have noticed in this article, we must mention the necessity of cleaning cellar and yard of filth. Many cellars, especially under the business houses, have not been properly cleaned for years. Vegetable and animal matter, drifting from storage, etc., accumulate and decay, forming not only offensive but deleterious compounds. Because the cellars are not seen by customers no call is felt to remove such filth-poisoning of the atmosphere, and disease is the result. The same state of affairs is often met with in cellars of residences.

Again, the slops and offals necessarily attached to a household are, as a general rule, cast out into the yard, or, at most, adjacent alley, and then left to decompose, the liquid portion permeating the soil and making it a bed of putrefying material that spreads disease. If any municipal law has been passed to correct either the evils of cellar or yard filth it has not been enforced, nor will it be, until full police power is given the Board of Health and means furnished them to assist, at least, in providing means for removal of such detritus.

In these two causes alone, either directly or indirectly, we find the source of one-half the disease incident to the citizens that *could* and *ought* to be *prevented.*

SUMMARY.

Taking the nature and formation of the ground, we find that the site of Indianapolis is susceptible of admirable drainage, both of surface and subsoil water—the first in direction of the natural channels of old bayous, etc., to the various streams mentioned; the latter by way of the underlying gravel bed. We see, also, that as this gravel bed is and must continue to be a sewer drain, the stream of water within it should not in any case be used as a supply for potable water. We are reminded, too, that while streams are proper

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sources of water supply to a city, in all cases such supply should be well guarded, and no water used except that obtained up-stream, uncontaminated by the wash or sewage of any portion of the city; that while privy vaults, cesspools, etc., as often found, dug shallow and not disinfected, are unhealthful and ought to be discouraged, still such vaults, sunk into the gravel bed and at proper times disinfected by dry earth or otherwise, are as safe, or more so, than the connecting of the closet with a sewer, and that only want of space should interfere with their adoption; that drain sewers, if not properly guarded, are not only a source of offense, but danger; that while they benefit, by diminishing the amount of soil water, they add to the impurities contained in the air, unless the traps are kept in order and the sewers frequently "flushed," the danger being increased where the house connects with the sewer; that wells sunk to the third stream can be proper sources of supply for potable water, and water taken from them can be used with safety; that at the present time (until the supply for the water works is taken farther up stream), properly filtered cistern water is the best, and practically the only usable water obtained by the citizens, with the exception of the few deep wells sunk to the third stream; that the sewers and drains should follow the course of the natural drainage of the city, viz: Pogue's run and the beds of the old bayous. If the facilities that nature has provided be but utilized no site more favorable for good health could be found than that of Indianapolis; but labored and costly endeavors to force surface drainage out of its natural course must be abandoned, and the absurd and unnecessary plan of raising water for potable use out of the sewer drain provided by the gravel bed must cease.

While certain appearances are often acknowledged to be good, one cogent objection is that they "take money." We should be the first to oppose any innovation that takes from the citizens their earnings without adequate return being given—returns that shall benefit all. But to sink a well to supply water works in the part of a city where all the surface and subsoil washings tend; to abandon the bayous and small streams, the natural track of drainage, and place a main sewer upon the high ground; to cement vaults and hope by this means to keep the subsoil water pure enough to drink; to compel the cleaning of vaults, and thus offer a premium for all

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households to cast their kitchen offals, old cans, shoes and rubbish in general into the vault, costing the citizens, and property holders especially, more money than would establish a proper and efficient cartage system, by which all such offals and rubbish should be taken away—is this anything but improvidence, caused by ignorance—or worse?

It would take comparatively little to remove the source of supply of the water works to a point where profit to themselves and safety to the citizens would be the result. It is as easy to build sewers along natural channels as otherwise; as cheap to have the source of water supply from cisterns, with proper filters, as to dig shallow wells, and cheaper to cart away the rubbish than to pump or bail it out of the privy vaults. It is upon the side of profit, both as to health and money, to work by a system, and not in a spasmodic or disjointed manner.

That Indianapolis is comparatively a healthy city does not show that there are no sanitary evils. Whether these result from a crudity of plan or are irremediable is a question of great importance. No flippant objections should be raised to useful enterprises. The sanitarian is but a watchman upon the walls, giving notice of *real* danger, so that we can be upon the alert.

We do not ask that Indianapolis or any other city of the state (for what is true of one is of all; the topography of the different sites being considered) to do something because some neighboring city has done so, but rather discriminate, and, with true economy, build well, so that changes will not so often be needed. We can not prevent all evils, but we can study the locality where we live and then adopt well established principles, not with a blind clinging to the dictates of any one, but with a flexibility born of enlarged views and guided by science and common sense.

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EPILEPSY.

WILLIAM FLYNN, M. D., MARION, IND.

Lessons drawn from failures, while less gratifying to the actor or student, are ofttimes quite as instructive and valuable as are those drawn from positive and brilliant successes. Occasional reviews of our practice, and its results in the treatment of a disease, are not without profit, and serve as mile-stones to mark our progress in the acquisition and application of knowledge. It is the object of this paper to present a brief analysis of fifty-five cases of epilepsy treated by Dr. Lomax and the writer during the last four years—to outline the treatment employed, to indicate something of the results obtained, and to present some of the impressions made on the mind of the writer in the study of the disease under consideration.

Of these fifty-five epileptics, twenty-nine were males, and twenty-six were females. Twenty-six of the fifty-five were 15 years of age or over when first brought under professional notice, while twenty-nine ranged in age from 15 years down to 12 months. In twenty-seven cases the first evidences of epilepsy were detected subsequent to the 14th year, in one appearing as late as the 60th year. In twenty-eight the disease manifested itself prior to the 14th year.

CAUSES.

In one case careful inquiry led us to believe the exciting cause was due to mental distress from family troubles, abuse, and the extreme mortification arising from publicity of these troubles; in two cases, probably due to the wholesale abuse of intoxicants, lecherous and brutish conduct; in three, due to puerperal troubles; in

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four, the exciting cause seemed to be dependent on or, at least very intimately associated with, the establishing or development of the menstrual function, at least the advent, progress and general course of the two justified recognizing a causal relation between them. In eight cases we believed the disease clearly attributable to serious injuries of the nervous system and brain, due to extrinsic sources. Ten cases appeared unquestionably due to inherited proclivities, such as syphilis, drunkenness, or some pronounced neurotic type very manifest in one or both parents, or ancestors. In twenty-seven cases no causes clearly satisfactory are noted; this omission being due far more to the ignorance, or reticence, or willful misrepresentation of the interested parties than to the indifference or neglect of the physicians. As to the mental condition of these fifty-five unfortunates, eleven adults showed decided impairment of intellectual vigor; among the youths and children, who at present comprise twenty-five of the fifty-five, the remaining thirty being now, or at the time of first observation, adults, there is a perceptible impairment of intellectual vigor in seven, the remainder being able to care for themselves and pass muster as intelligent beings, when extreme youth is not present as a barrier. Among the above are a few who are gradually becoming pronounced imbeciles, and a few who suffer from paralysis (progressive), upon whom a hopeless prognosis is pronounced.

With no intent to make the above analysis conform to any particular classification, we do find, however, a striking proof of the critical observation and excellent classification of Le Grand Du Saulle, who, in a recent work,[1] divides epileptics into four general classes, insane epileptics, marked epileptics, alcoholic epileptics and paralytic epileptics, a classification we believe to be in harmony with the careful study of any considerable number of cases. Furthermore, he recognizes three general forms of somatic phenomena in epilepsy. These are vertigo, incomplete access and the convulsive attack, these manifestations, so different in appearance, frequently finding themselves united in the same unfortunate, and alternating capriciously. At other times there exist but two. Often, however, but one of these phenomena is apparent, which

(1) Étude Médico-légale sur les Épileptiques. Paris, 1877.

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revives at indeterminate times, and reproduces itself in the same manner with a uniformity which is unmistakable. Among these fifty-five may be found those in whom this neurotic trouble has forced no imprint on their intelligence; who go in and out among us, who manage their affairs successfully, and who, by their manner, successfully conceal their infirmity from the community. Again, there are those who present only transient trouble of the intellectual faculties either during or after their attacks of vertigo, or the more pronounced attacks, and who, in their long freedom from these attacks, enjoy complete integrity of their reason. There is yet another class whose minds are profoundly altered, and in a permanent manner, whose alienation is too often acquired and irremediable, and who, when they are not submitted to a continuous and vigilant care and treatment, are likely to be excitable, impulsive, furious and too often dangerous. Among the number are some gifted with superior intelligence, who are known as epileptics to but few beside their physicians, in some cases their own families being ignorant of the true nature of the malady, and yet they are the victims of clearly defined epilepsy, the exciting cause being clearly traceable in several cases. Despite their superior intelligence they are the subjects of pronounced convulsions, and consequently suffering from intellectual disorders, more or less grave, which render them liable to dangerous impulses.

Those suffering from alcoholic epilepsy, while manifesting in general the usual symptoms characterizing the disease, nevertheless suffer a more distressing sense of its hold upon them than do those exempt from the vice of intemperance. Its march is more irregular; its form is insidious; it is domineered by an all ruling passion, the alcoholic (perhaps hereditary) predisposition. Illustrations drawn from these cases would only tend to confirm the long taught relation between parental infirmity and its manifestation in the offspring, or tend to show that, despite the flattering statement of Reynolds, Hughlings Jackson, Nothnagel and others, mental deterioration is a too frequent accompaniment of this disease.

It is no part of this paper to discuss mooted questions concerning the pathology of epilepsy, nor to draw fine distinctions in varieties; neither is it the object of the writer to include in the cases under review any one which can, by a liberal and most generous diagnosis,

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be classed as the frequent companion and adjunct of epilepsy. We have tried to eliminate the eclamptic conditions of childhood, such as result from teething, acute hydrocephalus, the convulsions following profuse loss of blood, as well as those resulting from sudden intra-cranial blood-pressure, toxemia and uremia; in short, all that class of complications or substitutes which so many insist go to make up what is termed vaso-motor epilepsy, and yet, despite this elimination there remain cases which, to the writer's mind, can not be otherwise classified. It is exceedingly difficult to believe that this class is merely epileptiform, and not a distinct epilepsy, and we confess to an ignorance of any solution yet offered, aside from the one of a vaso-motor form, which satisfactorily accounts for many of the phenomena presented. The contributions of Binswanger[1] to this theory of a vaso-motor form are among the strongest and most instructive that have recently been published. Furthermore, is not the treatment of this disease by the bromides based upon and explained by this theory? The theory of a cerebral anemia being admitted, the treatment of epilepsy by the bromides, whose known tendency is to constrict blood-vessels, would appear irrational, as we would thus bring about the condition causing the trouble—a mode of treatment savoring of that sugar-coated delusion, homeopathy; but our treatment is directed to the prevention of recurrences, and it is eminently scientific. That the bromides diminish reflex activity we know. Just how they do it we do not certainly know.

Morbid conditions dependent on over-excitability of various reflex functions are controlled by the bromides. It may be that the initial action is on the peripheral nerves, soothing and removing morbid irritability, thus tranquilizing the centers. It is much more probable, however, that a specific effect is exerted on the sympathetic, which controls the muscular coats of the arteries, thus stimulating them to contract, restoring tone to the weakened vessels, and thus promoting a healthful regularity and diminishing the tendency to spasm. This restoration of tone to the minute vessels must tend to improve the nutrition of the centers, and well nourished centers are not so prone to morbid function as are those which suffer from the stagnation and venous character of the blood in the

(1) Berliner Klinische Wochenschrift, Nos. 26, 27, 1878.

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dilated capillaries, for the quickly moving, well aerated blood of elastic channels is conducive to healthy growth and action.

In the treatment of the above cases we have tried many remedies—the bromides of potassium and ammonium, hydrate of chloral, tinct. digitalis, arsenic and hygienic treatment, and the average of our success is not very flattering.

We have tried the drugs in varying combinations, after the plan of Seguin (*Medical Record*), and as our own experience has suggusted. There has been no routine treatment for these cases as a class, but the majority have been put upon record and the most satisfactory results have followed a combination of bromide potassium, Fowler's solution, hyposulphite of soda (sufficient to keep the bowels rather loose), and carbonate of ammonia.

But little complaint is made of the unpleasant rash attending the free use of the bromides, the arsenical preparation successfully checking it, and the carbonate of ammonia tends to prevent that unpleasant condition of the stomach which likewise springs from the free use of bromides, the free bromine acting as an irritant.

We believe there have been some cures—we know that many cases have been benefited; in fact, we confidently expect a modification of the attacks when the patient is subjected to active, faithful, continuous treatment. This is, as a rule, an element of uncertain value, for the friends of epileptics are uncommonly prone to run after strange gods and traveling quacks. But, with full control of our patients, and fair assurance that treatment is followed, the success that follows is meager. But this is not surprising, for whether we will it or not we are compelled to acknowledge that there exist causes beyond therapeutic control. The terrible power of hereditary influence in human development, that inevitable, inseparable relation of man's present being to his past antecedents, are elements of power and permanence. "No mortal can transcend his nature; and it will ever be impossible to raise a stable superstructure of intellect on bad natural foundations." Every man acknowledges "that good or bad qualities in animals pass by hereditary transmissions; they act habitually as if the same laws were not applicable to themselves; as if men could be bred well by accident; as if the destiny of each criminal and lunatic was determined, not

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by the operation of natural laws, but by a special dispensation too high for the reach of human inquiries."[1]

Too often these epileptics are not accidents, not anomalies; they can be accounted for by satisfactory causes instead of being considered the wondrous work of inscrutable Providence. While to the zealous physician, in love with his profession, it is a pleasure to minister unto these unfortunates, yet is it equally one of the saddest phases in his professional life to know them intimately, to see the kind, appealing look, the anxiety with which they try all remedies, to listen to their story of hopes and disappointments, to see the constantly recurring attacks, the mind slowly weakening, and at last either indifference or melancholy claiming them.

To treat this class successfully is not in the power of the physician. It would be a veritable re-formation of the individual nature to make well such persons. The examination of these cases has not shown very flattering results, but some good has been accomplished. We believe a few have been cured and many benefited, but the success that attends the treatment of epilepsy is such as to teach us that despite the advances being made in professional knowledge, but little that is positive and flattering has been accomplished in this field.

(1) Maudsley—Responsibility in Mental Disease.

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TWINS--DELAY OF SECOND CHILD—ARTIFICIAL DELIVERY—DEATH.

A. HENLEY, M. D., FAIRMOUNT, INDIANA.

Was called Monday, September 29, 1879, to see Mrs. S——, a short, thick, heavy-set woman of sanguine-bilious temperament, in her first labor. The case was in charge of Dr. S. F. Brunt, and labor pains had set in on Saturday previous, but dilatation of the os did not take place until about 7 P. M. Sunday, after which labor progressed without any untoward symptom until 8 A. M. Monday, when a male child was born alive. Immediately the doctor discovered there was another in utero, and on examination per vaginam he found the placenta protruding at the os, and a little higher up the sac of waters could be distinctly felt, which, on making an attempt to rupture, receded beyond reach, unless the whole hand was introduced into the vagina, which was thought not justifiable, as the pains had ceased.

After waiting some two hours, and using all the usual means at command to excite efficient uterine contractions, and failing, I was sent for, and arrived some four hours after the birth of the first child. I found the woman resting quietly; said she felt no symptoms of a return of the pains, nor had she since the birth of the child. There had been but little hemorrhage, and her condition every way seemed to be good. A vaginal examination disclosed the neck of the womb to be firm and unyielding, and about on a level with the anterior and right lip of the os, and completely filling the orifice. I found the placenta, with, as I thought, a very

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small portion detached, as I could insert my finger but a little way between the edge of the placenta and cervix uteri.

The question that now came up was what to do next. We had a case before us which I venture but few practitioners ever see. One child delivered, the placenta presenting in advance of a second child, and the uterus calmly settled down and firmly contracted around the body of the child, as though nothing further was required of it. Some authors would have advised an opiate and employed venesection, as the safest and shortest way out of the quandary; while others would have resorted to the more bold and certain method of introducing the hand, rupturing the membranes, seizing the feet and bringing the child down by force; and yet others would advise the more conservative course of giving rest with the opiates. The first proposition was objected to from the fact that our patient might lose more blood than was desirable, as we did not know what moment we might have an alarming hemorrhage by a detachment of the placenta. Secondly, we considered it impossible, in any case, to perform the operation of turning without more or less danger to the mother, and that it ought not to be had recourse to without necessity. All these matters having been discussed, and as there was no hemorrhage or any other symptom demanding immediate interference, the patient not having slept any for two nights previous, and having expressed herself as being tired and sleepy, we determined on adopting the latter course, thinking that with a few hours' rest and sleep the uterine energy would so far recuperate as to expel the child per *vias naturales*. A possibility, too, of there being a difference in the time of conception had its weight in determining the latter course. Consequently we ordered her nourishment, then an opiate; the room to be kept quiet, so that she might sleep. Our patient had a good sleep, and expressed herself as feeling considerably refreshed. Night soon came on, and yet, so far as labor-pains were concerned, everything was as calm as a summer's morn.

Another consultation was held; again we decided to wait, as there were no physical signs requiring immediate action, thinking surely the pains would return some time through the night. Our patient rested well all night. Morning dawned without relief, and with it came an outside pressure for immediate action. The husband and

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friends now were clamorous for us to do something; consequently about 7 A. M., after a short consultation, and the necessary arrangements having been made, while the doctor administered chloroform, I prepared to operate by turning, should it be found necessary. On reaching the os with my right hand it was with difficulty that I could introduce it on the fetal surface of placenta, so firm were the contractions, but by steady pressure I soon reached the upper border of placenta, where the uterine cavity seemed to cease, and for a moment I thought of a double uterus. But on manipulating a little further, a finger slipped through the constriction and touched a portion of the child. It was now plain to me why the sac of waters receded when an attempt was made to rupture them; also, why we could not touch them or the child in previous examinations. There was a complete hour glass contraction between the placenta and child. On passing my hand through the constriction I discovered the nates presented, left side anterior, but on attempting to reach a foot the uterus contracted with such force that I thought at first I should have to withdraw my hand, for the pain endured could not have been much greater had it been squeezed in a vise. But with patience and perseverance I was rewarded by reaching the left foot, which I brought down, and drew the hips through the os, then brought down the other foot; but now, instead of finding delivery quickly and easily accomplished, as I had expected, I found every inch of territory contested by a persistent stubbornness worthy of a better cause. The circular fibers of the uterus alone seemed to contract, by which the child was grasped and held by a force but little inferior to that of my own. But after a continued effort for the space of about three-fourths of an hour I succeeded in delivering all but the head, which was resting in the cavity of the pelvis. My grip having given out, I requested Dr. Brunt to complete the delivery, which he did—child dead.

The uterus now contracted firmly down on its contents, and after using expression with friction to abdomen, with slight traction on cord, without effect, I introduced my hand and found the same irregular contractions existing as before, there being two placentæ, one attached high up on the left side, the other as before stated. I had but little difficulty in removing them by making the separation, the upper one being detached first. There was not more hemor-

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rhage than in an ordinary case, and our patient rallied from the effects of the operation nicely, and we congratulate ourselves as having got through with a knotty case. And as a preventive against typho-malarial fever, which was prevalent in that vicinity, we ordered quinia in full doses every three hours, with disinfectant vaginal irrigation and generous diet. I called the next evening and found patient looking bright, and expressing herself as feeling able to get up and go to work; skin moist, a slight headache, but no pain in bowels or unusual tenderness; lochia, free; tongue shows malarious coating; pulse, 93; temperature, 102°; patient to have quinia and chlorate of potash freely and bromide of potash for headache. Wednesday morning—pulse, 100; temperature, 102°; had rested well through the night; appetite, good; was ordered a dose of castor oil. 2 P. M.—pulse, 120; temperature, 105½; heavy, yellow coat on tongue; bowels moved by oil; but little tenderness or swelling; urine free and passed with ease; takes food with a relish; gave solution soda sulphate with spirits nitre dulc. every three hours up to 7 P. M., then to have two grams of quinia in the space of three hours, to be followed by the solution. Thursday, 7 A. M.—pulse, 100; temperature, 102°; had perspired freely after taking quinia; but little deafness or ringing in the ears; bowels acting freely; ordered same medicine as before, and also opium and bismuth. Thursday afternoon her temperature ran up to 105°; pulse, 112; the lochia became scant and the bowels tender; continued the irrigation and gave quinia, tincture of iron, paregoric and dovers powder. Friday morning—pulse was 96; temperature, 102°. Afternoon—pulse, 96; temperature, 105°. Patient about the same on Saturday, but worse on Sunday morning and rapidly grew worse during the day, and died at 4 P. M., apparently from the effects of the continuous high temperature.

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PLACENTA PREVIA.

OCCULT HEMORRHAGE AND MAL-PRESENTATION.

E. S. ELDER, M. D., INDIANAPOLIS, IND.

Mrs. J. L——, aged 28, light complexion, delicate, spare-built woman; multipara, second child; first child was said to have been an eight months one, and lived one week after birth.

Eight months after birth of first child the mother again became pregnant. Had threatened abortion or premature labor every month since the second month; is now supposed to be eight months advanced. One month ago she had violent hemorrhage and severe irregular pains, lasting forty-eight hours, after which she became strong, and was heartier than before during pregnancy. On May 18, 1879, at the end of the eighth month of gestation, she was attacked with severe pains and threatened miscarriage, and upon being summoned I found her suffering from well defined indications of labor, and with well marked uterine contractions, and notwithstanding the faithful and persistent use of the remedies usually employed in those cases the pains grew gradually more severe and continuous, until labor was fully inaugurated. Upon examination I found the os uteri but very little dilated. The pains were severe, but not bearing down in character—*no hemorrhage.* At the expiration of four hours I again examined the uterus, and found the os but very little dilated. I was barely able to introduce the point of my index finger into the external os; therefore was unable to diagnose position of child, or what parts were presenting.

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The pains were regular and persistent and bearing down in character, although the patient complained that the pains were "doing no good." At the expiration of the seventh hour I again examined and detected the membranes presenting at the mouth of the uterus, but the os was yet undilated. Pains hard, continuous and bearing down. From this time the membranes continued to descend, and a tumor, external to the os, was gradually formed. At short intervals I examined the os, and found it externally, dilated, soft and patulous, yet upon my finger reaching the internal portion, I found it undilated and the edges sharp and resisting. Immediately outside the internal edge of the cervical canal the membranes expanded and a pyriform tumor formed, the apex of which reached the internal os, the base gradually extending toward the vagina. As yet there was nothing calculated to create any uneasiness, as there was no hemorrhage, and the pains were frequent and disposed to bear down.

I continued making examinations at short intervals; found the intra-vaginal tumor increasing, but no more dilatation of the internal os. The tumor soon filled the vagina and protruded between the labia. I had been careful to preserve it, supposing that it would assist in the dilatation, although as yet I had not been able to pass my finger within the os uteri, consequently could not tell anything in regard to the presentation. I had no reason to doubt but the tumor was the ordinary bag of water and contained nothing but amniotic fluid. I informed the patient that the water would soon be discharged, and that then her pains would become more efficient.

At 3 A. M., nine hours after the beginning of labor, and during a severe pain, the sac ruptured and a large amount of fluid was discharged. I waited a few moments, the fluid being rapidly poured out. The patient remarked that there must be a "great deal of water," and that it was "still passing very fast;" I was struck with the pallid face of my patient, and putting my hand under the covering I was astonished to find a large mass of clotted blood in front of the pudenda, and that at every contraction of the uterus it was still being poured out. I immediately forced my hand into the vagina and found it filled with soft clots of blood, which I removed, and running along the membranes up to the neck of the uterus I found the blood pouring through the internal os,

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which was but very little dilated. I at once forcibly introduced the tip of the index finger and began dilating the opening. In a few moments I introduced the second finger and detected the edge of the placenta loosely lying over the internal os. I introduced my fingers between the placenta and uterus and separating them back as far as I could reach, the hemorrhage now ceased, uterine contractions became vigorous and I awaited development, not yet being able to diagnose the presentation. After a few sharp pains I examined and detected the side of the thorax presenting. I immediately comprehended the gravity of the situation and informed patient and friends, and decided that version was the only alternative. As it was 2 A. M., and the patient reduced very much, I determined to anesthetize her and deliver without waiting to send for additional aid. After giving her a full drink of brandy I administered chloroform to anesthesia, when the friends and nurses all deserted me and I was compelled to desist before introducing my hand into the uterus, as the moment the anesthetic was withheld, violent contractions of the uterus ensued. I made a second attempt, the husband of the patient promising to stand by with the anesthetic. After partly dilating the mouth of the uterus I was again deserted and the anesthetic withdrawn.

In vigorous language I denounced their cowardice, and ordered another physician called. After waiting an hour, Dr. J. H. Bigger made his appearance, and coincided with my views of the case and its demands. He took charge of the anesthetic, and in a few minutes, for the third time, I dilated the os, and introduced my hand into the uterus. Seizing the feet of the child, it was delivered in a short time, and was dead. The placenta was not delivered promptly, and I again was compelled to introduce my hand into the uterus. The placenta was detached and delivered, patient rallied promptly and had a good getting up, and has done well ever since. Upon examining the placenta we found that the edge which presented at the os had been *previously* detached and that the former uterine surface for an inch back toward the center had cicatrized, and a surface four and one-half inches wide had been recently attached to the uterus, and about the center of this surface a rent in the placenta large enough to admit two fingers was found,

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and furnished conclusive evidence of having been the point from which the blood had emerged into the anmiotic sac.

Let us notice a few points of interest:

1. The condition of the detached edge of the placenta. This had evidently been detached some time previous to the time of labor, as the detached surface had firmly cicatrized, and was in a sclerotic condition. That this had taken place the month before, at the time of the severe hemorrhage, I have no doubt, and as repair of both the surface of the placenta and of the uterus had occurred, no hemorrhage at the beginning of labor was encountered.

2. The remaining utero-placental attachments were abnormally firm, whether from the effects of the efforts at repair of the former injury, or from some other cause, I am unable to answer.

3. The laceration and detachment of the placenta at its middle, while the edges were firmly attached, is an interesting point, and I account for it by the fact that the presentation was a transverse one, and that the vigorous uterine contractions, acting upon the irregular shaped transverse mass, with an abnormally adhesive placenta, had evidently ruptured the utero-placental attachments immediately over a large uterine sinus, and the placenta being thus loosened, an accumulation of blood would take place between the sinus and placenta, and a severe contraction of the uterus would produce increased pressure upon that portion of the detached placenta, and rupture occurred, and the blood poured from the open sinus directly into the sack containing the fetus. The only possible way to arrest it was to detach that part of the placenta between the lacerated portion of the os uteri. This being done, the uterus could uniformly contract and close the bleeding vessels.

4. The persistently contracted condition of the os uteri was owing to (*a*) the irregular shape of the uterine contents, the transverse position of the child not allowing contraction to occur uniformly, and instead of the ordinary relaxation of the muscular fibers of the internal os, a *tonic* contraction resulted from disturbed normal clonic contractility; (*b*) the unyielding adhesion of the utero-placental surfaces prevented the transmission of the effect of the contractions of the fundus of the uterus to the cervix, and the circular fibers around the cervix were unaffected by the contractions of the base of the uterus.

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5. I desire to call attention to the fact that there was *no external hemorrhage* until *after the rupture of the membranes.* This is a very unusual occurrence, and I fail to remember of ever having seen it mentioned. It could only occur as suggested above. It certainly seems strange that so many factors entered into this particular case. As far as my reading has extended I believe the case is a unique one.

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THE METRIC SYSTEM.

WEIGHTS.		APPROXIMATE TROY WEIGHT.
One milligram (written 0.001)	equals	1-65 gr.
One centigram (written 0.01)	equals	1-6 gr.
One decigram (written 0.1)	equals	1½ grs.
One gram (written 1.)	equals	15 grs.
One decagram (written 10.)	equals	2½ drachms.
One hectogram	equals	3 oz. and 100 grs.
One kilogram	equals	2½ pounds.

MEASURES (CAPACITY).		EQUIVALENTS.
One milliliter	equals	16.231 minims.
One centiliter	equals	2.705 fluid dr.
One deciliter	equals	3.381 fluid oz.
One liter	equals	2.113 pints.

MEASURES (LENGTH).		EQUIVALENTS.
One millimeter	equals	0.0394 inch.
One centimeter	equals	0.3937 inch.
One decimeter	equals	3.937 inches.
One meter	equals	39.37 inches.

OLD STYLE.		METRIC *grams.*
m i or gr. i	equals	.06
f ʒi or ʒi	equals	4
f ℥i or ℥i	equals	32 *

*The decimal *line* instead of points makes errors impossible.

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"There is a Reaper whose name is Death;
And with his sickle keen
He reaps the bearded grain at a breath."

In Memoriam.

1880.

JOSEPH R. BECK, M. D., of Allen Co.

JAMES F. HIBBERD, M. D., of Wayne Co.

GEORGE SUTTON, M. D., of Dearborn Co.

JOHN MOFFETT, M. D., of Rush Co.

BENJAMIN NEWLAND, M. D., of Lawrence Co.

Committee on Necrology.

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REPORT ON NECROLOGY.

JOSEPH R. BECK, M. D., CHAIRMAN.

Gentlemen, Members of the Indiana State Medical Society:

At the meeting of this society held in May, 1879, I had the honor to introduce a resolution which had in view the creation of this committee, and you unanimously voted it into existence, and your revered President of that year at that time appoined this committee, with myself as chairman, and Drs. Hibberd, Sutton, Moffett and Newland as my associates.

My object in asking you for this committee was two-fold, and as follows: I felt that we, as a society, while not doing any injustice *de facto*, were yet doing so *de jure*, by permitting some of our long-tried and fully trusted fellows, and some of our most ready, willing and able co-workers in the field devoted to the advancement of medical science, to fall in the harness and to quietly drop out from amongst us to take their long rest under the sod and the dew, without one word from us to show that they had ever been endeared to us by any professional ties, or to indicate that we had any disposition to say anything to cherish or embalm their memories.

In imagination I put myself in the places of our dead, and I can scarcely give utterance to the sorrowful feeling that pervaded me as a chill, when I saw myself, after having devoted the work of many of the best years of my life to the interests of the regular profession in Indiana, sinking away into an obscure grave without one word from my former comrades in arms to even indicate that I had fought the good fight shoulder to shoulder with them.

Again I cast my eye over the ranks of our brethren of this society who are yet part of our phalanx, and I single out many

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a one who has for years stood his earnest vigil with me, and some who were here years and years before me, men who have carried the colors of the profession in this state right up in the front, and who, armed *cap-a-pie*, have borne the heat and burden of the day, and have grown old, gray and decrepit in service under this flag, and I sorrowfully ask myself whether these old and tried warriors in the cause of truth and humanity would be permitted by this now great society to fall away from its ranks unremembered, unnoticed and unknown? Whether or not the living congeners of these would have

> "Not a sigh for the fate that darkles,
> Nor a tear for the friends that sink!"

And when I contemplated this sad picture, and remembered that in my catalogue ingratitude was the most heinous sin, I did not feel like standing silently while my old and very dear friends dropped out from amongst us without entering my solemn protest against such an exhibition of ingratitude. I again imagine myself in their places, and I feel that when I strew the flowers of memory upon the graves of our departed, I am only doing as I would be done by; and my earnest hope is that one of my sincere friends shall do a like office for me when the great Reaper shall gather me into his sheaf.

I had another reason for asking for the constitution of this committee, which came to me long after the first had formulated itself to my mind; and this was the purpose of gathering the necrological statistics of this society, with a view of making them useful in connection with the theory of the mutual aid system, which I have elsewhere advocated, and about which nothing need be said here.

In pursuance of instructions to make our report at this meeting, I mailed to the Secretary of each county society in the state, which was auxilliary to this society in 1879, the following circular letter:

FORT WAYNE, INDIANA, September 1, 1879.

DEAR SIR: The Indiana State Medical Society being unwilling that any of its members should go to his grave unwept, unhonored, and unsung, and

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desirous to award a full meed of post mortem honors to its deceased workers, has concluded to place upon record a brief notice of such of the departed as can be obtained.

In order the more effectually and systematically to embalm the memories of our late fellow-members, the State Society, at its meeting in May, 1879, placed this labor of love in the hands of a Committee on Necrology, consisting of the undersigned, chairman, and Drs. Hibberd, Sutton, Moffett and Newland, which committee was instructed to make its first report to the society at its annual meeting in 1880.

In pursuance of these instructions, I ask you, as Secretary of your County Society, to prepare and forward to me as soon as possible a brief obituary notice of any of your members who have deceased during the years 1878, 1879 and 1880, up to May 1 of the latter year. Please do not sacrifice items of general interest in any biography to brevity.

The living members of the medical profession in Indiana owe this much of respect to their late comrades, and prompt action is expected from you in this matter. Address all communications to

Yours, very respectfully,
JOSEPH R. BECK, M. D.,
Chairman Committee.

I have received but few replies to these letters, and I am sure that by no means all have been remembered; for it must be true that—

"There are loved ones lost! There are many graves
In the distant dell, 'neath protecting trees,
Where the streamlet winds and the violet waves,
And the grasses sway to the sighing breeze."

The spirit of forgetfulness, or that of carelessness, which is equally reprehensible, seems to have left out the memories of some of our members who fell during the years I have named; for I feel certain that as a society—

"We mourn for the pressure of tender hands,
And the light of eyes darkened in death's eclipse—"

whose names are not in the hands of your committee.

While it is true that the names of our fallen companions which this committee has received are few in number, it is equally true that among them will be found the names of some of our oldest and best comrades; some who had achieved

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both years and righteous fame, and some who were younger and not so well known; some who, by reason of immense ability and great force of character, took their places and towered amongst us as commanders, and some who belonged to the rank and file, but who were none the less needed to sustain the battle. The notices of these dead are here given in the order that they were received by me, and without any special arrangement; and the name of the reporter who furnished the notice is appended to each.

DR. LOUIS HIGHMAN.

REPORTED BY DR. S. H. PEARSE, OF THE POSEY COUNTY SOCIETY.

Dr. Louis Highman was a native of Posey county, Indiana, and was born December 9, 1845. His father was a farmer, and lost his life in the late civil war. Dr. Highman remained with the family on the farm for some years after his father's death, when he went to attend a commercial college in the city of Evansville, Indiana. Having completed his commercial course, he accepted a position as book-keeper for one of the leading mercantile firms of New Harmony, and during the time he was thus employed his spare moments were devoted quietly and almost secretly to the study of medicine.

In April, 1872, he gave up his position and turned his attention exclusively to the study of medicine, under the direction of Dr. James W. Rawlings, of New Harmony. He was a close and hard student, and he soon left New Harmony to attend the Cincinnati College of Medicine and Surgery, from which he graduated with honor on June 23, 1874. He then returned to New Harmony and at once entered into a business connection for a term of years with his preceptor, Dr. Raw-

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lings, who at this time was in possession of a large and lucrative practice. This connection was ably and profitably continued until May 31, 1877, when it was dissolved by the death of Dr. Rawlings.

Dr. Highman continued in the practice, and so popular was he, that young as he was in the practice, he lost but little of the large business enjoyed by the former firm of Rawlings & Highman. On the 9th of December, 1877, the same being the 32d anniversary of his birth, he was married to Miss Ellen Schnee, of New Harmony. This marriage was a most happy one, and in the vigor of manhood, and in the prime of life, he found himself the double possessor of a pleasant and happy home and a lucrative practice.

On the 20th of December, 1877, he, with others, had a meeting at which the Posey County Medical Society was organized, of which he, being one of its founders, became and ever remained an active member. Being possessed of fine qualities of head and heart, he created no enemies, and continued to widen and extend his circle of friends daily.

But, alas for the uncertainty of human life! On the 15th of January, 1879, he was attacked with pneumonitis, with a liver complication, to which he speedily succumbed, and died on the 22d of the same month, after an illness of only a week's duration, having just passed his 34th anniversary.

All who knew him will testify that the Posey County Medical Society, and its great head, the Indiana State Medical Society, have lost a member who was worthy of their remembrance.

"After the burden, the blissful meed;
After the flight, the downy nest;
After the furrow, the planted seed;
After the shadowy river—rest."

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DR. ROBERT J. HAGGERTY.

PREPARED BY O. S. CHAMBERLAIN, ESQ.—REPORTED BY DR. GEO. G. GREINER, OF ELKHART COUNTY.

Dr. Robert J. Haggerty was born in the State of New Jersey, about fifty-eight years ago. He was left to depend upon his own exertions for a livelihood at the age of ten years, and thenceforward he not only earned his own support and education, but he rendered frequent and valuable assistance to others of his father's family, who became more or less dependent upon him.

Many and bitter were the struggles through which he passed, and, under these circumstances, his preliminary education was necessarily sadly neglected, and this created a defect which afterward seriously obstructed his progress, but which he remedied as best he could by the exercise of his great natural ability and by most studious application. He early chose the profession of medicine, and passed through his college, earning his way at the time by means of labor performed outside his study hours, and yet always assiduously courting a closer acquaintance with, and exhibiting an unwavering devotion to, his chosen profession.

He graduated in medicine in 1852, it is supposed at the Cleveland Medical College. He also attended a course of lectures in the medical department of the University of Michigan, and again graduated, this time in 1865, from the Western Reserve Medical College. He was engaged in practice in Hancock county, Ohio, up to 1865, when he removed to Elkhart, Indiana, where he resided and practiced until his death.

Up to the time of his last illness he was a devoted, diligent and successful practitioner. He was a member of the Elkhart County Medical Society, of the St. Joseph Valley District Medical Society, of the Indiana State Medical Society, and of the American Medical Association. Because of his rigid and

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unwavering adherence to the regular medical profession and to the Code of Ethics, he encountered much and violent opposition from irregular practitioners and empirics, who sought by every artifice within their power to weaken his influence and usefulness; but their efforts had no perceptible effect upon the esteem with which he was regarded by his very large circle of friends and patients.

His eventful and laborious life was finally ended in death on the 16th day of January, 1880.

"*Requiescat.* Through the spring-time
Every bank will flash with flowers,
Lambs will sport, and larks will carol,
Hawthorn deck itself in bowers.
Better so. Sea-waves will sparkle
Gem-like on the sandy shore;
Here will float a white-winged sea-gull,
There will flash the boatman's oar.
Myriad birds will chant their carols,
Blackbirds whistle, thrushes trill;
Will they heed the grave new sodded
In the church-yard by the hill?"

DR. JAMES J. DAILEY.

REPORTED BY DR. JAMES F. HIBBERD, OF WAYNE COUNTY.

Dr. James J. Dailey died in Milton, Wayne county, Indiana, on December 17, 1879, aged 46 years.

Dr. Dailey was born in Raysville, Indiana, in 1833. When a young man he taught school for some time, and in 1854 he began the study of medicine with his cousin, Dr. William Dailey, at Fayetteville, Indiana.

He afterward attended two courses of lectures in the Ohio Medical College, and took his degree of Doctor of Medicine from that institution in 1871. He was engaged in practice in

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several places prior to 1872, and in that year he settled in Milton, where he remained until his death.

Dr. Dailey was an active member of the Wayne County Medical Society, and for some time its secretary, and that society, at its regular meeting held on January 8, 1880, recorded an appropriate tribute to his memory.

Dr. Dailey was married to Miss Goodwise, in 1854, and of this union there came four children, two of whom, with their mother, survive.

"There's many and many a fair, sweet-scented blossom
That has faded and paled from the light of the day,
And many a white hand and dear, warm-beating bosom
Hath grown pulseless, and wan, and cold as the clay;
For many a dear one hath passed through the portal,
Through the mystical gate to the shadowy strand,
And we here only know that we *call* them immortal."

DR. JOHN MICHAEL JOSSE.

REPORTED BY DR. JOSEPH R. BECK, OF THE ALLEN COUNTY SOCIETY.

John Michael Josse was born July 17, 1818, in the town of Leimersheim, in Rhenish Bavaria. After having received a thorough classical education in the gymnasium of his native town, and having exhibited a decided predilection for the medical profession, he was sent first to Wurtzburg, and afterward to the medical department of the University of Heidelberg, where he became the pupil of the celebrated surgeon Chelius, and from where he received the degree of Doctor of Medicine in 1843.

After duly passing his state examination, he engaged in private practice in Bavaria for a short time, and then entered the army, and was appointed surgeon of the regiment then commanded by the late General August Willich, in which capacity

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he served for some time. Upon the breaking out of the German rebellion of 1848, his whole regiment having revolted, in a manner characteristic of the man Dr. Josse cast in his lot with the cause of freedom; and when the mutiny was suppressed, which involved the execution of a number of his comrades, he, in company with Carl Schurz, Franz Sigel, August Willich, and many others, were compelled to fly the country to preserve their lives, although they were all at that time condemned "in contumaciam," and it was only a few years ago that this edict was revoked.

He came to the United States, and landed in New York city in the autumn of 1848, and at once began the practice of medicine there, and he remained so situated until 1855, when he removed to Fort Wayne, and there he remained, engaged in active practice up to within three days of his death, with the exception of the time he served in the Federal army. In September, 1862, he was appointed assistant surgeon of the seventy-fourth regiment Indiana volunteer infantry, and very soon thereafter, upon the appointment of his old commander, Willich, to the colonelcy of the thirty-second Indiana volunteers, he was promoted to be surgeon, and assigned to the latter regiment. When Colonel Willich was promoted to brigadier general, he detailed his old surgeon to duty at his brigade headquarters, although the latter remained in nominal charge of the thirty-second regiment until September, 1864, when he was honorably discharged from the service.

Dr. Josse was elected president of the Board of Health of the city of Fort Wayne in 1873, and was successively re-elected until the year 1879, rendering the most efficient and faithful service during his incumbency.

Dr. Josse was twice married; the first time to Miss Barbara Hartman, on May 9, 1844, who bore him four children, only one of whom survives. Shortly after his arrival in New York in 1848, his first wife died, and on May 4, 1851, he married Miss Louisa Bauer, who became the mother of nine children by him, eight of whom, with their mother, survive their father.

He died on April 13, 1880, at 9 o'clock A. M., of a rupture

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of the common bile duct from impaction of gall stones, which produced peritonitis and subsequent exhaustion, having been ill less than three days, and being in his sixty-second year.

Dr. Josse was of a diminutive size physically, but was an educated giant mentally. He was as brave as a lion, and utterly devoid of fear, which was most fully attested by his ride of two miles on horseback under a perfect hailstorm of shot and shell to attend his wounded general in one of the hotly contested engagements of the late war, and also when he climbed a stairway to visit a maniacal private patient, who met the doctor at the topmost step and fractured his skull with a club, but did not prevent the doctor from overcoming and prescribing for him before he retired to have his own wounds dressed.

During the larger portion of his matured years, both here and abroad, Dr. Josse lived in a perfect whirlpool of excitement, but through it all he seemed to be as calm and unruffled as a summer evening, and in whatever circumstances fate placed him he was always apparently happy. As a physician he was the impersonation of gentility, was universally beloved, and was remarkably successful at the bedside. He was tolerant of the opinions of his brethren in the profession, but was always ready to give his own and to stand by and maintain them, and he almost uniformly demonstrated them to be correct.

He had no sympathy for, nor patience with, any hypocrisy in medical practice, and he held it to be a cardinal duty to adhere to and support the local medical society where he lived, and this was one of his very strong prejudices. He was generous to a fault, devoted to his friends, and with a fiery determination which only ended with his life, he ardently hated and despised those who, by reason of their own actions, had made themselves his enemies. He was a kind, indulgent and affectionate husband and father, and he will evermore be sadly missed by his family, his brethren of the Allen County Medical Society, his very many friends, and the city of his adoption.

"Amid these shining memories entwines a shaded thread,
Our living friends are gathered here, but we have not the dead.
As reunites our ancient band some soldiers do not come,

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Their hero hearts have ceased to beat, their manly lips are dumb;
We have not on the roster now some noted names of old—
They have joined another army, on another list enrolled;
They have joined the forward columns, and are further gone than we,
They have closed their march forever this side the shoreless sea."

DR. GEORGE W. MEARS.

REPORTED BY DR. F. S. NEWCOMER, OF THE MARION COUNTY SOCIETY, INDIANAPOLIS.

Dr. George W. Mears was born at Harrisburg, Pennsylvania, on June 27, 1803. His preliminary education was had in the common schools of his day, supplemented by instruction at the hands of private tutors. He began the study of medicine under the direction of Dr. E. Daniels, formerly of Massachusetts, about 1823, and in the winter of 1824–25, he attended his first course of lectures at Yale College. In the two following sessions, namely those of 1825–26, and 1826–27, he was in attendance at the Jefferson Medical College, from which he graduated in the spring of 1827. He immediately engaged in practice in Philadelphia, where he remained two years, and from thence he removed to Vincennes, Indiana, where he remained until 1834, during which year he removed to Indianapolis, where he soon accumulated a large business, which he retained up almost to the day of his death, literally dying in the harness.

In 1849 he was elected Professor of Obstetrics and the Diseases of Women and Children in the Central Medical College of Indianapolis, at that time the Medical Department of Asbury University, which chair he retained until the existence of the school terminated, a period of about three years. In 1869 he was again elected to the same chair, this time in the Indiana Medical College, which he was the active incumbent of

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until the college became the Medical Department of Butler University, when he became Emeritus Professor of the same chair, which position he retained until his death.

Dr. Mears was an active, faithful and reliable working member of the Indianapolis Academy of Medicine, and later of the Marion County Medical Society, of the Indiana State Medical Society, since 1850 of the California State Medical Society, of the Rocky Mountain Medical Association, and its President in 1874, of the American Medical Association, and served as president of the Indiana State Medical Society one term, and a member of the International Medical Congress in September, 1876. He thus afforded an example of society work and affiliations which is the very best evidence of a physician's love for his profession, and as he was never an idle member, since he rests from his labors his works do *not* follow him, but remain with us as active agents in behalf of the general professional weal.

Dr. Mears died from pneumonitis, at his residence in Indianapolis, at 5:15 P. M., of May 20, 1879, being at the time nearly 76 years of age.

He was married at Vincennes in November, 1833, to Caroline Sydney, daughter of the late Nathaniel Ewing, of that place, and from this marriage there resulted three children, all of whom, together with their mother, survive the subject of this sketch.

Dr. Mears had many of the finer attributes of the perfect man, in addition to those of the cultured and courteous physician. He was a close reasoner, and went from cause to effect in an air line. His long, extensive and very varied experience, coupled with his ability to comprehend, analyze and appropriate its results, made him an authority amongst us, and when he lifted up his voice in our councils it was a hoary-headed sage that gave advice.

He was particularly attached to his especial department, and though never weak anywhere in the field, he was especially strong as a branch worker, and what he wrote for us bearing upon this department was invariably the drippings of wisdom from an overflowing fountain of exceedingly rare and very

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ripe judgment. Although he had reached an advanced age, yet we can not fail to feel that one of our notable warriors has fallen with the possession of undiminished vigor, and really in the prime of his mental life.

"*He* has fought Death, but the battle is ended;
We are wounded and torn by the fight;
Deep shadows around us descended,
Envelope in night.
We bow to our grief and privation,
We labor for pleasures that cloy;
We work here to build the foundation
Death loves to destroy."

"But we caught the faint gleam of an out-drifting sail,
And the flash of a silver-tipped oar;
And we knew by the low, rustling sigh of the gale,
That a life had gone off from the shore."

DR. TOMPKINS HIGDAY.

REPORTED BY DR. J. H. W. MEYER, OF THE LAPORTE COUNTY SOCIETY.

Dr. Tompkins Higday was born in Tompkins county, New York, some time in August, 1820, and was the youngest but one of a family of twelve or thirteen children, ten of whom lived to mature adult life.

His education was received first in the common school of his time, and subsequently in the academy at Homer, New York. He began the study of medicine some time in 1844, in the office and under the tution of Dr. A. B. Shipman, at Cortlandville, New York, and in 1845–46 he attended a course of lectures at the Geneva Medical College. In the following session of 1846–47 he was a student of the Indiana Medical College, then located at Laporte, Indiana, from which he graduated February 14, 1847. Immediately after this he engaged in practice at Laporte, being temporarily absent from

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there during the winter of 1851–52, at which latter date he again graduated in medicine, this time from the Jefferson Medical College.

He was twice appointed surgeon during the war of the rebellion, but was each time compelled to resign on account of failing health. He was the incumbent of the chair of Physiology and General Pathology in the Indiana Medical College from the time of his graduation until the dissolution of the school, and was the first president of the Laporte County Medical Society.

Dr. Higday was taken ill with typhoid fever on September 9, 1876, and, after an illness of twenty-seven days, he died at his residence in Laporte, on October 5, 1876, being at that time just entered upon his fifty-seventh year, and being in the very prime of a bright intellectual existence.

Dr. Higday was married late in life, having espoused Miss Clementina Bradley on June 22, 1875; but his wedded life was of very short duration, for Mrs. Higday died in December of the same year.

As a physician, Dr. Higday held a deservedly eminent position, and his death withdrew from the profession in Indiana one of its ornaments as well as reliable and busy workmen.

"For us blooms pleasure's every flower;
But all too soon their beauties fly;
A thousand cares and pains o'erpower,
And then we ripen, droop and die.
To-day our soaring thoughts discover
Worlds mortal eye had ne'er surveyed;
To-morrow earth may wrap us over,
And dust are we whom dust has made."

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DR. JOHN GEORGE EMIL RENNER.

REPORTED BY DR. I. A. E. LYONS, OF THE MARION COUNTY SOCIETY.

Dr. John George Emil Renner was born in the town of Eschenrod, Hesse Darmstadt, Germany, on January 2, 1850. He was sent to the gymnasium of his native place, which he continued to attend until his seventeenth year, when he left Germany and spent nearly two years in Algiers, from whence he returned to Germany about the year 1868. After completing his education he embarked for America, and after a residence of a few months in the state of Connecticut he turned his steps southward, and resided in Arkansas and Mississippi for a period of about three years, enduring in the meanwhile all the hardships incident to the lot of a stranger in a strange land. During all this time his spare moments were diligently employed in the endeavor to perfect himself in the English language, and he subsequently took up the study of medicine.

He became a matriculate of the University of Louisville in due course, and received the degree of Doctor of Medicine therefrom in 1877, and immediately settled in practice in Indianapolis. On the twenty-seventh of August, 1878, he announced his conviction that his path of duty would lead him to the succor of the victims of yellow fever at Memphis, Tennessee, and, despite all the remonstrances of friends, the evening of August 29 found him domiciled in Memphis and ready with his share of help for the afflicted. He remained engaged in this self-imposed duty, rendering all the aid that stricken humanity could have expected from one man until September 11, when the relief-extending hand was itself paralyzed by the scourge whose ravages it had helped to mitigate, and after five days of torture, on the sixteenth of September, 1878, his light went out, and his life was laid as a sacrifice upon the altar of our common humanity.

Dr. Renner died in the flower of his youth, and before he

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had been afforded much opportunity to contribute his share to the advancement of his chosen profession; but he had given evidence even in his short life of the material of which he was composed, and his death has but confirmed the prediction, and has added another name to the long list of illustrious heroes which the medical profession has contributed to the history of the world.

"How life's hopes are fleeting, are fleeting,
How quickly we wake from 'wildering dream;
How the days we have met and those we are meeting
Forever flow on like the waves on a stream;
Time, an' thou wouldst linger and with us abiding,
Say thou what the stories that would have been told—
Say, would they be all of such grief and dividing,
And of the dark valley so dreary and cold?"

DR. AMOS ORLANDO LAWRENCE.

REPORTED BY DR. HENRY JAMESON, OF THE MARION COUNTY SOCIETY.

Dr. Amos Orlando Lawrence was born in the city of Fitchburg, Massachusetts, on April 10, 1849. His early life was passed in a manner similar to that of most boys who are brought up in the country; for, although born in the city, he was raised on a farm. So backward was he in educational matters that at nine years of age he knew but little more than the alphabet, which condition of things was largely if not entirely accounted for by his dislike of confinement in a schoolroom and the frequency with which he played truant. This distaste of study, however, gave way about his thirteenth year to an intense desire to learn, and at the age of fifteen he became a pupil of the Fitchburg High School, where he closely applied himself to study for two winters. He then attended school at Ackly for a short time only; when, finding that he was afforded no assistance by his father, he determined to leave home and do for himself. This he at once did, and earned his own way by working on a farm, in a sawmill, and at chopping

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wood during the spring and summer months, and in the autumn by employment on a railroad. He then entered the New Ipswich Academy, where he remained until the following spring, and during the succeeding winter he taught a school near his own home at Fitchburg.

He graduated from this academy in June of 1869, and at once entered Dartmouth College, where he applied himself with the same energy which had characterized his former work, and after completing a full classical course he graduated A. B. with honor from Dartmouth in 1873. He came to Indiana in the following autumn, and located at Danville, where he secured a position as principal of the High School, and here he remained two years engaged in teaching, and at the same time devoting all his leisure hours to the study of medicine. He entered the Indiana Medical College in October, 1875, and attended one term, and the following year became a matriculate of the College of Physicians and Surgeons of Indianapolis, from which he graduated Doctor of Medicine in February, 1877. He was physician to the city dispensary during the year 1877, and was also engaged in general practice in the city until the time of his death, which occurred on the 22d of April, 1879.

Dr. Lawrence was a young man of fine ability, of great promise, modest, retiring and unobtrusive in his manner, temperate in his habits, and of a kindly and genial disposition. He enjoyed the esteem and respect of his colleagues in the profession in a high degree, and both in his private and professional life reflected only honor both upon himself and the doctorate.

"In one swift moment you have passed and gone
Out on the blind way all must tread alone,
Unaccompanied, unfriended, none knows where—
Gone out into the vague and vast unknown.
Vanished forever from the world away,
From all the accidents of night and day,
The seasons' chance and change, the voice of man,
And all life's passion, joy, hope, pain and play.
Gone where no mortal sense can track your flight,
Gone where Faith casts a weak and wavering light,
Where trembling Hope and Fear bewildered stray,
Lost in the pathless, silent shades of night."

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MYRON HAWLEY HARDING, M. D.

REPORTED BY GEORGE SUTTON, M. D., OF DEARBORN COUNTY.

Myron Hawley Harding, Jr., M. D., was born in Lawrenceburg, Indiana, January 3, 1855, and died at the same place, of diphtheria, January 12, 1879, aged 24 years. He was the son of Dr. M. H. Harding, Sr., of Lawrenceburg, a well-known physician of Indiana.

Young Harding received his early education at the excellent schools in Lawrenceburg, and commenced the study of medicine under the tuition of his father. He passed through the usual course of study, attending three full courses of lectures, and graduated at the Ohio Medical College, in the spring of 1878. During the last year of his study he had charge of the dispensary clinic, under Prof. Forcheimer. Immediately after receiving his diploma he entered upon the practice of medicine, in connection with Drs. Harding and Robbins, in Lawrenceburg, and also became a member of the Dearborn County Medical Society. In the winter of 1879 he made arrangements to remove to Seymour, Ind., to practice his profession, and it was his intention to have gone the same week in which he died.

Dr. Harding had a fine mind, was a close student, and was fond of his profession. He was remarkable for the urbanity of his manners and the faculty with which he made friends, and, had he lived, there is no doubt would have soon been a prominent member of the medical profession.

After his death the Dearborn County Medical Society passed a series of resolutions, which were ordered to be spread upon the minutes, as expressions of the esteem with which he was held, and offering condolence to the parents and family for the loss they had sustained.

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WILLIS E. SUTTON, M. D.

REPORTED BY GEORGE SUTTON, M. D., OF DEARBORN COUNTY.

Willis Edgar Sutton, M. D., a son of Dr. George Sutton, was born in Aurora, Ind., June 2, 1848, and died of phthisis pulmonalis, at his father's residence in Aurora, February 24, 1879. Dr. Sutton for many years was of a feeble constitution, which resulted from a severe attack of cholera in the spring of 1849. As he advanced in years he seemed to become more vigorous, and he strengthened his constitution by out-door sports, of which he was extremely fond. He received a good education, attending first the excellent graded schools in his native town, then Moore's Hill College, and afterwards Wabash College, at Crawfordsville. In the year 1869 he commenced the study of medicine, under the tuition of his father, and attended lectures at the Ohio Medical College, graduating in the spring of 1872. The following winter he went to Philadelphia to continue his studies, and attended lectures at the Jefferson Medical College; also, the hospitals of that city. On his return home he entered into the practice of his profession, and having those elements of success—ability and pleasing manners—soon became popular as a physician, and acquired a large practice. He had great love for his chosen profession, and was conscientious in the discharge of its duties, attending the sick faithfully and with a kindly spirit. He was fond of surgery and a good surgeon, and had performed delicate and difficult operations with success. He was an excellent anatomist. A good student, close observer, and familiar with the periodical literature of the day, he bade fair to rise to eminence in his profession. Being skillful as a microscopist, under the direction of his father, he was the first to detect trichina in the pork raised in Southeastern Indiana, rendering valuable assistance in 1874 in investigating cases of trichinosis that occurred in Aurora at that time.

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He connected himself with several medical societies—the Dearborn County Medical Society, the Indiana State Medical Society, and the American Medical Association. In the spring of 1877 he made a trip to Memphis for the benefit of his health. While at Evansville, on his return home, he was caught in a storm of rain, his clothing becoming wet, and that night on the boat he was seized with a chill, followed by an attack of pneumonia. The disease assumed dangerous symptoms by the time he reached Aurora, the left lung becoming consolidated. During the summer he went to Minnesota, his health improving somewhat in that climate; and in the fall to Florida, arriving at Jacksonville just as the yellow fever had made its appearance in that city and was creating a panic amongst the inhabitants. Some of the letters which he wrote on this subject were exceedingly interesting, and were published in the Dearborn *Independent.* While in Florida he kept a daily record of the weather, and took notes on a variety of subjects, as it was his intention to write a paper on Florida as a health resort for invalids. He remained in Florida until the following May, when he returned but little improved in health. The winter of 1879 he determined to go to Texas, but finding himself failing rapidly in that state he returned home, and died a few weeks after his return to Aurora, in the thirty-first year of his age. Thus passed away a young man who was ardently fond of his profession, was high-minded, honorable in every respect, universally liked, and commenced his career with the most brilliant prospects.

Immediately after his death appropriate resolutions were passed by the Dearborn County Medical Society and other societies of which he was a member.

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HUGH TIMBERLAKE WILLIAMS, M. D.

REPORTED BY GEORGE SUTTON, M. D., OF DEARBORN COUNTY.

Dr. Hugh Timberlake Williams, of Rising Sun, Ohio, was born in Breckenridge county, Kentucky, on May 27, 1812, and died on December 22, 1879, in the sixty-eighth year of his age.

Dr. Williams was the son of Otho Williams, a Methodist minister, who emigrated from Virginia to Kentucky in 1802. He received his early education principally at home, as there were but few public schools, when he was a youth, in the section of country in which he resided. In 1832 he commenced the study of medicine under Dr. Holmes, of Hawsville, Kentucky. In 1833 his brother died, and he was called to Louisville to settle the estate, consequently he had to discontinue for a time the study of medicine. He then engaged in the mercantile business, but a financial crisis made it necessary to discontinue that pursuit, and he again directed his attention to the study of medicine. In 1840 he attended lectures at the Medical Institute of Louisville. During the summer of 1841 he also attended a course of private lectures given by Prof. S. D. Gross, and the same year was elected resident assistant physician in the Marine Hospital of Louisville. In 1842 he received from the Medical Institute his diploma, and immediately after graduating removed to Helena, Arkansas, and commenced the practice of his profession. He remained at this place until the year 1845, and then removed to Rising Sun, Indiana, where he remained up to the time of his death, having a large share of the practice and enjoying the confidence of the community. He has been to a considerable extent identified with the growth of Rising Sun. In 1846 he assisted in draughting a charter for the city and procuring its enactment by the Legislature. He was a member of the city council and school board for several years, and while member of the school board

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was principally instrumental in procuring the erection of the fine school building which adorns the city.

During the rebellion he was appointed by Governor Morton consulting officer for Ohio county, with the rank of colonel of the militia. He participated in the chase of the rebel General Morgan through Indiana, and "was afterward complimented by Governor Morton for the gallantry and skill displayed on that occasion." He served one term in the Legislature, representing Ohio and Switzerland counties.

Dr. Williams was an active member of the Methodist church. He belonged to the Masonic Fraternity, and was buried by the Order. He also belonged to the Odd Fellows.

Dr. Williams was a well read man, a safe practitioner, a good talker—expressing his ideas with clearness and precision—and was highly esteemed as a citizen.

DR. JOHN HUGHS, M. D.

REPORTED BY GEORGE SUTTON, M. D., OF DEARBORN COUNTY.

John Hughs, M. D., was born in White township, Hamilton county, Ohio, September 21, 1816, and died of pneumonia, February 23, 1880; age, sixty-three years and five months. He received his early education within a few miles of Elizabethtown, in Hamilton county, Ohio, and it was there that he spent the most of his life. In 1836, he commenced the study of medicine under the tuition of Dr. George Berry, of Brookville, Indiana. He pursued the usual course of study, attending the lectures at the Medical College of Ohio, and graduating in 1839. After receiving his diploma, he immediately commenced the practice of his profession at Metamora, Indiana, and remained at this place two years. He then removed to Elizabethtown, Ohio, within three miles of the place where he

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was born. He formed a partnership with Dr. Israel Tennis, and they practiced together for several years. In February, 1842, he married Mary B. Clark, whose death preceded his sixteen years. Shortly after his marriage he formed a partnership with Dr. Walter Clark, his brother-in-law, which continued until 1852, when he removed to Marion, Ohio. There he remained three years, and then removed again to Valley Junction, two miles east of Elizabethtown, and soon regained his old practice among the many friends of his youth. He has two sons and three daughters; one of his daughters is married; both of his sons are physicians. He had a large country practice which he retained until his last illness. This illness was of only four days' duration. A few hours before his death he asked after his last patient, and not more than an hour before death felt his own pulse. He was enthusiastically fond of his profession; a careful and observing student; a practical man in every respect, and a faithful attendant on the afflicted. He joined the Dearborn County Medical Society in 1844, and was a member at the time of his death. He was also a member of the State Medical Society. His professional life extended over a period of forty years, and was one of incessant toil. The writer can bear testimony to his many noble traits of character, his honesty, his independance, his love for his profession, his industry, and his logical mind.

At the first meeting after his death the Dearborn County Medical Society passed resolutions as expressive of the esteem in which he was held by its members, and the loss the profession had sustained by his death.

In conclusion, the committee begs leave to report that it suggests and recommends that this society does now instruct its Committee on Publication to print this report, as read, in its Transactions for 1880; that arrangements be made to surround the pages in the Transactions which will contain this report with reversed column rules, or some other suitable bor-

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der; that not less than one page be devoted to each obituary notice, and as many more as the notice may require; and that the chairman of this committee be reimbursed for the actual expenses incurred in the preparation of this report.

All of which is very respectfully submitted.

[Signed] JOSEPH R. BECK, M. D.,
JAMES F. HIBBERD, M. D.,
GEORGE SUTTON, M. D.,
JOHN MOFFETT, M. D.,
BENJAMIN NEWLAND, M. D.,
Committee on Necrology.

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TRANSACTIONS

OF THE

INDIANA STATE MEDICAL SOCIETY

AT THE

THIRTIETH ANNUAL SESSION.

First Day.

MORNING SESSION.

The thirtieth annual session of the Indiana State Medical Society convened in Masonic Hall in Indianapolis, on the morning of Tuesday, May 18, 1880, at 10 o'clock, with the following officers present: President, J. R. Weist, M. D., Richmond; Vice-President, J. D. Gatch, M. D., Lawrenceburg; Secretary, G. V. Woolen, M. D., Indianapolis; Assistant Secretary, George W. Burton, M. D., Mitchell; Treasurer, G. W. H. Kemper, M. D., Muncie; Librarian, F. J. Van Vorhis, M. D., Indianapolis.

The society was called to order by the retiring President, Benjamin Newland, M. D., of Bedford, Indiana.

Dr. Newland said: "The society will come to order. Gentlemen of the Indiana State Medical Society, I have the honor to introduce to you the President-elect, J. R. Weist, M. D., of Richmond, who will now assume the duties of the chair."

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The President, on taking the chair, said :

Gentlemen of the Society:

In assuming the duties of President of the Indiana State Medical Society, I desire to return to you my most sincere thanks for the high honor you have conferred upon me. I recognize in it the highest honor that the profession of the state can confer upon one of its members, and I trust, in the transaction of our business, to discharge the duties incumbent upon me as wisely as I can, and that our meeting may be harmonious, and of advantage to scientific medicine.

Before proceeding to the regular business of the association, you will listen to prayer by Rev. Dr. Andrus.

Prayer by R. Andrus, D. D. LL.D.

The President—The first business before the meeting is calling the roll of members. The Secretary will call the roll.

The list of delegates being called, those whose names are in italics responded:

LIST OF DELEGATES.

ADAMS—T. T. Darwin, Wm. T. Scrock.

ALLEN—*C. B. Stemen, J. S. Gregg, Samuel Anderson, J. R. Beck.*

BENTON—*J. K. Thompson*, A. W. Wells.

BLACKFORD—*J. C. Bennett*, T. M. Garrett, *C. Q. Shull.*

BOONE—J. H. Hardy, *W. P. Parr*, J. A. Alford, *D. R. Walker, D. B. Davis*, R. Trowbridge, *H. M. Rose.*

BROWN—*E. S. Arwine, Alfred J. Ralphy.*

CARROLL—*Chas. Angell, W. M. Loop, S. T. Noland.*

CASS—*W. H. Bell, N. W. Cady.*

CLARK—*N. Field*, T. A. Graham.

CLINTON—*J. S. McMurray, J. McAdams, J. M. Myers, E. E. Schuire.*

DAVIESS—*G. G. Barton, J. H. Millman, J. W. Clark.*

DEARBORN—*J. R. Davis*, M. H. Harding, Jas. Lamb, *H. H. Sutton*, T. E. Craig, E. B. Vincent, H. C. Vincent, J. C. Terrell.

DECATUR—*J. L. Wooden, J. H. Alexander*, Thos. Johnson.

DELAWARE—*S. V. Jump, G. W. H. Kemper*, C. Skiff.

DUBOIS—*W. R. McMahan*, G. P. Williams, H. W. Stork, *R. M. Welman.*

ELKHART—*H. T. Montgomery.*

FAYETTE—V. H. Gregg, *J. Chitwood.*

FLOYD—*E. H. King*, G. H. Cannon, A. Neat.

FOUNTAIN—J. S. Riffle, J. W. Quinn, *G. S. Jones, W. W. Cole.*

FRANKLIN—*Thos. Gifford, G. B. Buckingham.*

FULTON—E. B. Bracy, *O. P. Waite.*

GIBSON—S. E. Munford, V. T. West, W. G. Hopkins.

GRANT—*Henry Charles, S. C. Weddington, Wm. Lomax*, J. W. Perry, N. H. Mauring, M. T. Shirley, *L. W. Williams, J. A. Meek, Frank Lenox.*

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GREENE—P. L. Brouillette, *S. Cravens*, M. Beaty, *H. R. Lowder.*

HAMILTON—*S. C. Dove, A. R. Tucker.* (Allowed four delegates.)

HANCOCK—*W. A. Justice*, W. R. King, J. B. Sparks.

HENDRICKS—B. Bartholomew, J. H. Brill, F. C. Ferguson, W. T. Lawson, H. C. Summers.

HENRY—*W. A. Boor*, J. Cochrane, W. Hobbs.

HOWARD—*J. T. Smith, W. K. Mavity, J. McL. Moulder, E. M. Ware, G. B. Scott.*

JACKSON—*S. H. Charlton, E. T. Finch, T. S. Galbraith, W. E. Whitehead, J. W. F. Gerrish.*

JOHNSON—*Z. Carne, J. J. Sadler, H. J. Hall.*

KNOX—*F. W. Beard, J. Bever, J. W. Pugh.*

KOSCIUSKO—*C. T. Peck, C. W. Burket, F. M. Pearman.*

LAGRANGE—Wm. Hughes, E. G. White, W. H. Short.

LAPORTE—*G. L. Andrew*, J. H. W. Meyer.

MADISON—*C. Free*, I. N. Vanmeter, J. W. Hunt, *T. K. Saunders*, W. Morgan, J. Stevenson.

MARION—*W. H. Haymond*, R. N. Todd, *J. Eastman*, I. C. Walker, *J. R. Featherston*, T. B. Harvey, C. A. Ritter, *T. M. Stevens*, J. H. Taylor, E. S. Eldei, *L. L. Todd, J. A. Sutcliffe, S. H. Mapes.*

MARSHALL—*J. H. Wilson*, R. B. Eaton, *W. N. Bailey*, A. H. Johnson.

MIAMI—J. A. Meek, *R. Pence*, O. C. Irwin.

MONTGOMERY—*J. W. Straughan. A. T. Steele, E. H. Cowan, J. S. French.*

MORGAN—H. W. Cure, *P. McNab*, B. H. Perce.

ORANGE—*E. C. Laughlin, J. A. Riffer.*

OWEN—*J. T. Belles, J. M. Goss, J. M. Stuckey, W. Schell.*

PARKE—H. J. Rice, J. S. Dare, *J. A. Goldsberry*, W. H. Gillum, *O. D. Hall.*

PIKE—*W. T. Hornbrook, D. H. Daniels, A. G. Hobbs*, A. B. Byers.

POSEY—*A. W. Spain*, S. H. Pearse, M. S. Blunt, D. Montgomery.

PULASKI—*G. W. Thompson, D. N. Foutz, D. J. Loring.*

PUTNAM—*G. C. Smythe*, L. M. Hanna, *C. B. McNary, H. E. Ellis*, C. F. Taylor.

RANDOLPH—*J. E. Markle, Wm. Commons*, J. T. Cheneworth, *L. N. Davis, A. H. Farquar.*

RUSH—*Jno. Moffett, J. W. Green, M. Sexton, Jno. Arnold, W. A. Pugh.*

STEUBEN—M. F. Crain, T. F. Wood, H. D. Wood, Sol. A. Wood, *W. V. Sweimger.*

TIPPECANOE—G. F. Beasley, *C. W. Schill*, H. W. Wiley.

TIPTON—*W. M. Glass, N. W. Doan*, A. M. Vickry, *A. B. Seward.*

VANDERBURG—*B. J. Day.* J. W. Irwin, E. Lithicum, A. M. Owen, W. B. Rose.

VIGO—J. T. Scovill, B. F. Spofford, S. J. Young, G. W. Crapo, *J. D. Mitchell, G. W. Hickson, S. C. Preston.*

WABASH—*J. H. Ford*, O. M. Lower, E. P. Peters, G. P. Kidd, R. F. Blount, *T. R. Brady*, F. S. C. Grayston, *L. O'Neal.*

WARREN—*A. M. Porter, I. Ross.*

WARRICK—T. B. Jones.

WAYNE—*J. F. Hibberd, S. S. Boyd*, J. Intzi, J. B. Summers.

WELLS—*J. I. Metz.*

WHITE—*Jno. Medaris, F. A. Grant.*

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The President—I will appoint as the Committee on Credentials, Dr. William Lomax, of Indianapolis; Dr. G. W. H. Kemper, of Muncie; Dr. R. N. Todd, of Indianapolis; Dr. J. H. Helm, of Peru; and Dr. J. L. Wooden, of Greensburg.

The next thing in order is the report of the Committee of Arrangements, Dr. E. S. Elder, Chairman.

Dr. Elder submitted the following report:

REPORT OF THE COMMITTEE OF ARRANGEMENTS.

Mr. President and Members of the Indiana State Medical Society:

In behalf of your Committee of Arrangements, I have the honor to report to you that we have succeeded in securing railway transportation, at reduced rates, to all delegates and members of the society who may attend the meeting. Also, we have prepared for the entertainment of the members of the society at various hotels of the city, at a reduction from the usual figure. The complete details of the railroad and hotel accommodations are contained in the attached circular, a copy of which has been mailed to every member of the State Society.

According to the adoption of a By-Law last year, it has become the duty of the Committee of Arrangements to prepare a printed programme for the use of members. Your committee have experienced considerable embarrassment in arranging that programme. But two papers were in our hands at the time designated at which they should be assigned, viz. (twenty days before the meeting of the society); however a large number were announced by title, and we found that we had enough material on hand to occupy in their reading more time than that usually allotted to the session of the meeting of the society. We have, however, endeavored to arrange them as satisfactorily as possible and to do justice to all parties and all subjects. We have yet unassigned material enough to occupy at least another half day's session, and as our hall rent and other expenses will not be increased by a continuation of the meeting until Thursday, we respectfully suggest that such be done.

As you will observe, by consulting the programme, there are an unusually large number of papers on proposed bills of laws to regulate the practice of medicine in our state, and upon "State Medicine," "Public Hygiene" and "Sanitary Science." We regard the presence of so many papers on these subjects as an indication of the great interest with which these matters are regarded by the profession of the state.

At the first thought your committee were of the opinion that all these papers should be referred to a special select committee to examine and report on the respective merits of each paper, but after consultation with some of the officers of the society they resolved to place them on the programme, giving them the prominence that, in our opinion, the subject demands; consequently we have assigned those papers positions on the programme during the early part of the session, in order to allow time for deliberation on these important subjects. We have grouped

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this class of papers into two classes, the first referring to "State Medicine," "Sanitary Science" and "Public Hygiene;" the second class referring to the legislation necessary to regulate the practice of medicine in our state. In order to more completely carry out the design of the committee we have, after consultation with a number of the members of the society, decided to rearrange this afternoon's programme so as to bring all the papers of the first group in consecutive order, and likewise those of the second group; consequently we suggest that the following be adopted in lieu of that published on the printed programmes:

PROGRAMME.

TUESDAY, MAY 18.—MORNING.

10:00 A. M.—Calling society to order.
Prayer, by R. Andrus, D. D. LL. D.
10:10 A. M.—Calling Roll of Members.
Appointing Committee on Credentials.
Report of Committee on Arrangements, E. S. Elder, M. D , Chairman.
Business requiring immediate attention upon suggestions of Secretary.
Report of the Secretary, G. V. Woolen, M. D.
Report of the Treasurer, G. W. H. Kemper, M. D.
Report of Librarian, F. J. Van Vorhis, M. D.
Report of Committee on Publication, Allison Maxwell, M. D.
Appointment of Committee on Ethics.
Appointment of Committee on Finance.
11:00 A. M.—"Report of a Case of Injury to the Head with Fracture of the Skull," Wm. Lomax, M. D., Marion.
11:35 A. M.—"Report of a Case of Abnormal Growth upon the Brain," I. C. Walker, M. D., Indianapolis.
12:00 M.—Adjournment.

TUESDAY, MAY 18.—AFTERNOON.

2:00 P. M.—Calling of the society to order.
"Report of Committee on President Newland's Address," by J. F. Hibberd, M. D., Richmond.
2:10 P. M.—Paper: "Harmony, Associated Action in Connection with State Medicine," by J. D. Gatch, M. D., Vice-President of the society.
2:25 P. M.—"Some of the Unsolved Problems in Public Hygiene and Synteretic Jurisprudence," by J.W. Hervey, M. D., Indianapolis.
3:05 P. M.—"Expert Evidence—What is it?" by F. J. Van Vorhis, M. D., Indianapolis.
3:20 P. M.—"Report of Health Commission," by Thad. M. Stevens, M. D., Indianapolis.
3:35 P. M.—"Sanitary Survey of Indianapolis, with Applications thereof," Thad. M. Stevens, M. D., Indianapolis.
3:50 P. M.—"Women Physicians in Hospitals for Insane Women," by Mary F. Thomas, M. D., Richmond.
4:10 P. M.—"Medical Legislation," by S. S. Boyd, M. D., Dublin.
4:30 P. M.—Memorial of Marion County Medical Society and a "Bill of a Proposed Medical Law," by J. M. Kitchen, M. D., Indianapolis.

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4:50 P. M.—"What are the 'Essentials' in a Bill to Regulate the Practice of Medicine?" Thad. M. Stevens, M. D., Indianapolis.

5:00 P. M.—"Legislation Necessary to Regulate the Practice of Medicine in Indiana," by J. F. Hibberd, M. D., Richmond.

Adjournment.

TUESDAY, MAY 18.—EVENING.

7:30 P. M.—Calling the society to order.

President's Address: "Problems in Relation to the Prevention of Disease," by J. R. Weist, M. D., Richmond.

Adjournment.

WEDNESDAY, MAY 19.—MORNING.

8:30 A. M.—Calling the society to order.

Appointment of Committee on Nominations.

Miscellaneous business.

9:00 A. M.—Paper: "Ergot: Its Use and Abuse," by William Commons, M. D. Union City.

9:20 A. M.—"Icteric Form of Pernicious Fever," by W. R. McMahan, M. D., Huntingburg.

9:45 A. M.—"Antipyretic Treatment of Typhoid, Lung and Puerperal Fevers," by A. Henley, M. D., Fairmount.

10:10 A. M.—"Gall Stones, with a Death," by C. B. Stemen, M. D., Ft. Wayne.

10:30 A. M.—"Death from Heart Clot," by J. S. McMurrey, M. D., Frankfort.

10:50 A. M.—"Diseases of the Cervix Uteri," by James Lamb, M. D., Aurora.

11:15 A. M.—"Report of two cases of Tumors of Anterior Wall of Vagina," by Joseph R. Beck, M. D., Ft. Wayne.

11:30 A. M.—"Placenta Previa and Occult Hemorrhage," by E. S. Elder, M. D., Indianapolis.

11:31 A. M.—"Report of a case of Umbilical Hernia, with Remarks," by A. A. Hamilton, M. D., Marion.

11:40 A. M.—"Human Longevity and the Hygienic Conditions Essential to Extend Life to its Full Limit," by W. S. Haymond, M. D., Indianapolis.

Adjournment.

WEDNESDAY, MAY 19.—AFTERNOON.

2:00 P. M.—Calling society to order.

Report of Committee on Nominations.

Miscellaneous.

2:15 P. M.—Paper: "'Kakonemia,' Pernicious Fever," by S. C. Weddington, Jonesboro.

2:45 P. M.—"Report of Select Committee on 'Placenta Previa,'" by E. W. King, M. D., New Albany.

3:00 P. M.—"Report of Committee on Necrology," by Joseph R. Beck, M. D., Chairman.

3:30 P. M.—"Epilepsy," by Wm. Flynn, M. D., Marion.

Miscellaneous.

Adjournment.

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Unassigned Papers: "A case of Ovariotomy with Recovery," by Wm. Lomax. M. D., Marion.
"Empyema," by A. A. Hamilton, M. D., Marion.
"A case of Twins, Artificial Delivery, Death," by A. Henly, M. D., Fairmount.
"Scarlatina," by G. W. Burton, M. D., Assistant Secretary.
"Etiology of Endemic Fever," by N. Fields, Jeffersonville.
"Diphtheria," by S. H. Charlton, M. D., Seymour.

Your committee would suggest that the President of the society request the various county delegations each to select a member of the Committee on Nominations as early as possible and hand the name of said member to the Secretary, and, as soon as all the delegations are represented, to have the President announce the Committee on Nominations.

There is an apparent discrepancy in the announcement of the report of the Treasurer of the society, as the programme was arranged by the committee. Your committee were of the opinion that the officers elect assumed their respective official positions immediately after their election, and we so announced the officers. Subsequently we ascertained that a different view was entertained by other members of the society, and that one, at least, of the officers elected at the last meeting (the Treasurer) was not discharging the duties of that office, and would not make a report as Treasurer, but that I. C. Walker, whom we considered the ex-Treasurer, would make the Treasurer's report; consequently the change as it appears.

Owing to the fact that our last year's change in the by-laws in regard to referring papers to committee of arrangements was imperfectly understood, the committee issued a circular in March calling the attention of the members of the society to the change, one of which circulars has been sent to each member of the society.

Your committee have issued 1,200 circulars in regard to the change in by-laws; have sent out 1,400 circulars of railroad and hotel arrangements; have furnished members of the society with 447 certificates to procure reduced R. R. fare; have corresponded freely with the various R. R. companies and with the medical journals; have sent invitations to the secretaries of adjoining state and local societies; have invited numerous members of the profession from adjoining states; have made as complete arrangements for the accommodation and pleasure of the session of the society as was in their power. Attached herewith is a bill of expenses incurred, for which we respectfully ask an order drawn on the Treasurer of this society.

Respectfully submitted,

E. S. Elder, M. D.,
T. N. Bryan, M. D.,
Joseph Eastman, M. D.,
J. R. Featherston, M. D.,
J. A. Sutcliffe, M. D.,
Committee of Arrangements.

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Indiana State Medical Society, to Committee of Arrangements, Dr.

To two days' and nights' rent of Masonic Hall	$40 00
To printing 1,500 four-page circulars	15 00
To printing 400 one-page circulars	3 00
To printing 900 notices of change in By-laws	5 00
To 300 railroad return certificates	1 50
To cash paid for decoration	5 00
To cash paid for 1,800 1-cent envelopes	20 88
To cash paid for 300 3-cent stamps	9 00
To cash paid for loan of table	1 00
To cash paid for loan of ice-cooler	1 50
To cash paid for 120 pounds ice	1 50
To cash paid janitor	2 00
To cash paid for telegrams to Missouri, Illinois and Kentucky State Medical Societies	2 20
To cash paid for 200 1-cent wrappers	2 32
To cash paid for paper and envelopes	3 20
	$113 10

It was moved and seconded that the report be received and the programme and recommendations therein contained adopted by the society.

The motion was amended so as to except the concluding recommendation of the report, that an order be drawn upon the Treasurer of the society for the amount of the bill of expenses attached to the report of the committee, and that the same be referred to the Committee on Finance.

The amendment was accepted, the motion as amended concurred in, and the report of the committee so referred.

The President—The next thing in order, according to the programme adopted by the society, is "Business requiring immediate attention upon suggestions of the Secretary." The Secretary will report any such business within his knowledge.

The Secretary—Mr. President, I do not think there is anything in my department that needs to be specially spoken of just at present. I understand that you, Mr. President, have some suggestions which it will please the society to hear.

The President—Gentlemen of the society, it is customary, I believe, for the President of this association to make such suggestions

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in his annual address as will, in his judgment, if carried into practice, tend to the betterment of the society and the profession. In obedience to that custom I have prepared the following:

RECOMMENDATIONS.

It is customary, I believe, for the President of this society to make such suggestions in his annual address as will, in his judgment, if carried into practice, tend to increase the usefulness of the society and advance the interests of the entire profession of the state. As anything of this kind would be out of place in my annual address, as I have planned it, I select this early period of the meeting to say all that I desire in this direction, that you may consider my suggestions and act on them at this session if they are deemed worthy of your consideration. I have but four matters to present, and shall consider them briefly.

1. As to the Length of our Session.

Our society is now so large and so thoroughly represents all sections of the state that many important questions in relation to the welfare of the society and the general good of the profession must be considered at each meeting. If they receive the attention their importance merits, our brief session of two days gives us little time for the strictly scientific work of the meeting. Every year the number and value of the papers submitted increase, and every year the possibility of properly considering them decreases. In my judgment the chief value of papers read to the society lies in the discussion they elicit. It has been the experience of the society heretofore that there is almost no time for discussion, and an examination of the programme for this meeting will show that the many papers on important subjects can not be properly discussed in a sojourn of two days. For this reason it seems imperatively necessary to increase the length of our annual session to three or four days, if the society is ever to fairly represent the status of its membership or the character of the work of which the medical profession of Indiana is capable. Another reason for lengthening our session is, that at present there is no time whatever for social features that might be in my opinion introduced into our annual meetings with great advantage.

2. Printing Papers in the Transactions.

With a due deference to the opinions of those who differ with me, I suggest that the printing in the volume of transactions of the society the papers read at its meetings, entails an useless expenditure of money, failing, as it certainly does, of bringing either notoriety or honor to their authors. It is well known the transactions of State Societies or of the National Association are not generally read, even by the members. A good paper, then, thus printed, is practically lost to the profession. Medical journals of wide circulation are willing to publish all papers of real value offered to them. Give the authors of papers presented to the society permission to publish them where they please, placing after the title "Read before the Indiana State Medical Society," and all valuable papers will, at an early day,

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be properly placed before the profession and attract the attention they deserve. Papers that respectable medical journals will not publish are not deserving of a place in our transactions. The money thus saved might be well expended in rewarding such of the members as, by original research, add new facts to the store of professional knowledge.

3. *The Importance of County Societies.*

I believe it is admitted in the American Medical Association that our society is one of the best organized in the Union, and this because the county society is the unit of the organization. It is important that it be kept so. It is desirable, therefore, that the State Society use all proper means to impress upon the minds of its members the importance of giving great attention to their county societies, in order to make them the best possible, and to make it apparent that all the energy spent upon district, inter-state and other similar societies, is a loss to the county organization, and therefore to the State Society.

4. *Representation in the American Medical Association.*

It having been the custom for the county societies, as well as the State Society, to appoint delegates to the American Medical Association, the profession of the state has sent to this national organization twice as many delegates as it is entitled to send. This is clearly wrong, and if continued will lead to misunderstanding and harm. It is almost certain that, sooner or later, delegates to the American Medical Association will only be received from state societies. Let us anticipate this, and in future only send such representatives. If the county societies nominate from among their own members the number of delegates to which they are entitled by law, and the state society appoints them, all parts of the state may be represented in the national association, and the delegates at the same time have the honor of being state delegates. The justice of such action was more fully shown in a circular on the subject lately sent to the various county societies, and I trust this society will sanction the action therein recommended.

There is still one other matter of minor importance that I think it would be well to settle by enacting a rule on the subject. There is a difference of opinion as to when the various officers of the society should assume the duties of office, whether at the termination of the session at which they are elected or appointed, as is the custom in the American Medical Association, or at the beginning of the next session. A simple rule on the subject would settle the matter and prevent all controversy in relation to it.

These suggestions are respectfully submitted. Their adoption will require no change in the constitution or by-laws of the society.

Dr. Commons, of Union City—I rise to make the motion that the suggestions of the President be referred to a special committee of three to report a rule of action in the case.

The motion was unanimously agreed to.

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The President—Now if some gentleman will be kind enough to name the committee. The chair is too modest to do so in this instance. Dr. Newland, will you?

Dr. Newland, of Bedford—I will name as the special committee to consider the suggestions of the President, Dr. Commons, of Union City; Dr. Boyd, of Dublin, and Dr. Charlton, of Seymour.

The Secretary—I have a communication here that I am requested to read, as business requiring immediate attention. It is from Dr. J. R. Beck, of Fort Wayne, and reads as follows:

To the President and Members of the Indiana State Medical Society:

GENTLEMEN—I have concluded that it will be of no use to apologize to you for having interrupted the exercises of this body sufficiently long to say a few words upon a subject, the importance of which, it seems to me, will at once impress itself upon your minds. I only offer as my reason for thus early introducing this subject, the fact that I desire very much to have the matter, I shall hereinafter advocate, take shape and crystallize before the adjournment of this session, if possible, and in order that this might be accomplished it is necessary to introduce the subject now.

Nearly all classes and conditions of men in this republic have organized and arranged some sort of a mutual aid society, the main idea at the bottom of each of which seems to be that of disbursing benefits upon or subsequent to the death of the member or party directly interested; or, in other words, a system of life assurance has been arranged in some one of its many forms. The medical profession stands almost alone in its lack of anything of this kind, and it has occurred to me that such a state of affairs should be speedily remedied. It is most probably quite true that but a small majority of the members of this body are so situated financially as that their families would be able to disdainfully refuse cash aid to the amount of say $1,500 within thirty days of death. In a strictly utilitarian sense, therefore, I suggest a close investigation of this idea.

For fear some question may arise relative to the expense of conducting such a scheme, I hasten to remark that this expense need be next to nothing, inasmuch as the regular officials of this society can easily conduct such an assurance scheme, with but little extra work, and no extraneous aid except such as may be rendered by secretaries of county societies in due course. My idea, in brief, would be to conduct the affair strictly within the limits of this society, and to permit its officers to do the work of both; to admit as members and beneficiaries all members who are in good standing in their county societies, which societies must also be in good standing in this body, and only such; to do away with any medical examination of applicants, and to take all members as stated, be they young or old, well or ill; to charge a membership fee of say one dollar at admittance, to be employed in the payment of general expenses; to levy an assessment of say $1.10 upon each member for each death, payable in ten days after due notice of the death is had; to pay over the assurance to the heirs within thirty days after death; to drop from mem-

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bership all who do not pay up the assessments in the required time; to transact the business of notifying of deaths and collecting of assessments through the secretaries of the county societies; and thus, without any extra machinery, and with but a trifling cost per annum to each member, great benefits may be made to flow from very small sources.

Our mortality list will average but little, if any, over six per annum, and thus the expense will be small. Virginia has already begun operations in this matter, and it does seem to me that we of Indiana can not afford to lag behind.

In conclusion, I move you, Mr. President, that you appoint a committee of three from this body to take charge of this communication and to mature some plan which shall cover in this subject, and that it be instructed to report back to the meeting some time to-morrow forenoon, for our final action on the same.

The motion concluding Dr. Beck's communication being seconded, the Chair put the question, and declared the vote to be in favor of the motion.

The President—I will appoint upon this committee, Dr. J. R. Beck, of Fort Wayne, Dr. F. S. Newcomer, of Indianapolis, and Dr. N. P. Howard, Sr., of Greenfield.

Dr. E. W. King, of Galena—Mr. President, I have a resolution on a subject somewhat similar to the suggestion you make with reference to the publishing of papers presented to the society in the medical journals, and I will just simply offer the resolution and have it referred to the committee just appointed.

There being no objection, the resolution was so referred without reading.

Dr. G. V. Woolen, Secretary, submitted his annual report, as follows:

SECRETARY'S REPORT.

Mr. President and Gentlemen of the Indiana State Medical Society:

I have the honor to respectfully report that I have collected from the various county societies reported in last year's transactions one dollar from each member, amounting in the aggregate to one thousand and twenty-three dollars, which amount has been paid to the Treasurer. I have received the credentials of the Brown, Franklin, Johnson and Owen County Societies, which I have examined and found correct. The thorough incorporation of the various societies has been complied with.

Respectfully submitted,

G. V. WOOLEN, *Secretary.*

On motion, the report of the Secretary was received, ordered to be placed on file and referred to the Committee on Publication.

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Dr. Hibberd—I would like to inquire, in this connection, if there is any report expected from the committee appointed last year in regard to the sufficiency of our incorporation? Has the Secretary any information upon that subject?

Dr. Woolen—I think the committee are not prepared. I will know by this afternoon. They probably desire to report progress and ask for another year.

The President—The report of the Treasurer is now in order.

Dr. I. C. Walker, of Indianapolis—I will make my report as Treasurer at 2 o'clock this afternoon.

The President—The report of the Librarian is the next thing upon the programme.

Dr. F. J. Van Vorhis, of Indianapolis—The Librarian has only to say that there are no books or papers belonging to the society that have come into his hands, and that the Librarian has no duties whatever, and consequently no report to make.

The President—Is the Committee on Publication prepared to report?

Dr. Allison Maxwell, of Indianapolis, chairman of the Committee on Publication, submitted the following report:

REPORT OF THE COMMITTEE ON PUBLICATION.

Gentlemen of the Indiana State Medical Society:

As chairman of the Committee on Publication, I have the honor of submitting the following report, viz:

There were eleven hundred copies of the Transactions of the society for 1879, printed and bound in cloth at a cost of $599.60; about 54 cents per copy. The committee, as in previous years, received bids and awarded the contract to the lowest bidder. As requested by the society, copies of the Transactions for review were sent to our most prominent medical journals—fourteen in number.

The *American Practitioner* and the *Toledo Medical and Surgical Journal* gave just reviews; the *Boston Medical and Surgical Journal* acknowledged the receipt of the Transactions, while the remaining eleven journals paid no attention at all to the book. The books were distributed to the various secretaries of the county medical societies, except those delinquent.

The budget, the papers of which were lost and then refurnished by the authors will be printed in a few days along with Professor Collett's Report of the Bureau o

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Statistics. By a resolution offered at the last meeting this budget, constituting the papers of the Health Commission and the President's address, were ordered printed in pamphlet form, and your committee requests that you will designate the number to be printed for distribution. Respectfully submitted,

ALLISON MAXWELL, *Chairman*

The President—If there is no objection, the report will be considered as accepted, and referred to the Committee on Publication. The Chair hears none. The report will be so referred.

Next in the order of business is the appointment of the Committee on Ethics. The Chair appoints as that committee—Dr. James F. Hibberd, of Richmond; Dr. J. W. F. Gerrish, of Seymour; Dr. Marshall Sexton, of Rushville; Dr. P. H. Jameson, of Indianapolis; and Dr. George L. Andrew, of Laporte.

The appointment of the Committee on Finance is next in order. The Chair will appoint as that committee—Dr. L. D. Waterman, of Indianapolis; Dr. Ben. Newland, of Bedford; Dr. F. W. Beard, of Vincennes; Dr. P. McNab, of Mooresville; and Dr. J. T. Bellis, of Spencer.

Dr. Lomax's paper—"Report of a Case of Injury to the Head, with Fracture of the Skull"—is next on the programme; but as Dr. Lomax is engaged in committee at this moment, Dr. I. C. Walker, of Indianapolis, will read his paper, entitled "Report of a Case of Abnormal Growth upon the Brain."

The paper read by Dr. Walker was one of unusual interest, and, after some discussion, was referred to the Committee on Publication.

The President—In the order of business we will now hear the paper of Dr. William Lomax, of Marion: "Report of a Case of Injury to the Head, with Fracture of the Skull."

Dr. Lomax read his paper, and motion was made to refer the same to the Committee on Publication.

Dr. Walker—Mr. President, it is just 12 o'clock, and it occurs to me that it would be as well to reserve the discussion of this paper until our afternoon session. I am one of the members who

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believe that when a gentleman takes the trouble to carefully prepare a paper to present to the association that it should be discussed. I am quite sure it is not very complimentary to the author of a paper to simply refer it to the Committee on Publication. I will therefore move that the society do now adjourn until 2 o'clock P. M.

The motion was agreed to, and the society adjourned.

First Day.

AFTERNOON SESSION.

The society met at 2 o'clock P. M., pursuant to adjournment, President Weist in the chair.

The question being put upon the disposition of Dr. Lomax's paper, it was referred to the Committee on Publication.

Dr. James F. Hibberd submitted the following report from the Committee on President Newland's Address, delivered last year, which, on motion, was referred to the Committee on Publication.

GENTLEMEN—Your select committee, to whom was referred so much of President Newland's address to this society last year as related to "state medicine and practical hygiene and general sanitary affairs," have given the subject attention and submit this report.

The definition of state medicine given by Dr. Chaille in the words following, appears to your committee to be full and satisfactory, viz: "State medicine is the application by the state of medical knowledge to the common weal; and embraces every subject for the comprehension of which medical knowledge, and for the execution of which state authority are indispensable."

This, it will be seen, embraces a range so wide as to include all that has been committed to your committee for consideration.

Three points are presented in President Newland's address so prominently as to claim special attention:

It is the duty of the state—

1. To foster and protect the health of her citizens.

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2. In some way to so label proprietary medicines that all who choose may know their composition.

3. Within certain limits, to inquire into the pretensions of practitioners of medicine, and point out the qualified to public recognition.

1. It is not our purpose to present general facts and arguments to establish the economy and humanity of preserving the public health; this has been done by a multitude of sanitary statisticians and humanitarians, learned and accomplished in such service, and most forcibly in the President's address to this society in 1878, in the President's address in 1879—the one now under consideration—and will be again in the President's address to be delivered to this meeting. From these sufficient sources this society is amply advised as to the general subject. We desire to offer some special considerations why Indiana should now, more than formerly, feel the pressure of the necessity of action in this behalf, and to point out what we deem the best method to obtain satisfactory results.

Indiana is sixty-four years old. When she had her legal christening as a state, she had but 64,000 inhabitants, and these, like all pioneers who establish homes in the primeval forests and on the virgin soil of a new American state, were, very largely, a law unto themselves, not only in political and social affairs, but in sanitary as well, and it was chiefly the law of the instinct of self-preservation, and was good.

With the diseases of the early settlers we have now nothing to do, nor need we do more than refer to the fact that with increasing population, there comes a series of new genetic influences that excite varied pathological conditions in those who are subject to their sway, and that these accumulate in quantity and virulence, unless in some way neutralized, until human residence can not be maintained in their presence. The ruins of Babylon, of Baalbec, of Ephesus and of Thebes are doubtless due more to the Nemesis of violated sanitary laws than to the prowess of assailing warriors.

In sixty-four years Indiana has had her sixty-four thousand people increased to two millions of population, and her territory has become decorated with countless farm houses and adorned with a host of cities and towns, and her soil and water and air polluted with the excretions of her inhabitants and the refuse matter of her civilization. In all this are the seeds of the danger to public health. And the danger increases in proportion to the density of population; not in simple proportion, but in some vastly greater, but unknown proportion. If one thousand people were scattered over the territory occupied by Indianapolis, some inroad would be made on the salubrity of the situation; but there being one hundred thousand people within the city, the menace to health is not simply one hundred times greater, but is probably multiplied more than a thousand-fold. And this relation holds good in all communities, urban, suburban and rural.

Beside these sources of disease, arising directly from numbers and compactness of population, there are others scarcely less potent that are incidental. The demands of civilization and the genius of the age have made transportation from center to circumference of this great country facile and rapid beyond the most sanguine speculations of our early settlers. The constant flux and reflux of people, animals and things, through these channels, make the introduction of portable disease, sooner or later, almost as certain as the succession of the seasons.

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But if the increase of population and the development of civilization carry with them the germs of disease, they also develop the study of antidotes and preventive measures, so that in fact there is in Indiana to-day knowledge among her citizens that, applied practically to the problems of preserving the health of her people, would lengthen the average life of her citizens and add to its economical value, notwithstanding the increase of population and the facilities of transit.

This knowledge is that of the sanitarian, and is of a compound character. Largely it is within the current requirements of the competent physician, but in addition there is demanded an acquaintance with engineering and with law, and there must be executive ability.

A moiety of our people, perhaps, know these facts in a general and indefinite way, but very nearly the total of them look to the medical profession with more or less confidence, in times of emergency, to protect the community from disaster springing out of unsanitary surroundings and conditions and in threatened epidemics. And it is true that medical men, by their education and experience, are fitted above other men to do this service, and, in fact, to them must the people apply to formulate measures to guard the public health. But however competent and willing physicians and their coadjutors may be to devise measures to protect the public health, they have not the power to execute them; nothing but the state, in the exercise of her supreme autonomy, has the authority to do this. And the state must exercise authority in this behalf as it exercises authority to protect property from theft and of persons from assault. She must delegate it to competent hands for immediate execution.

Accordingly the proposition seems clear that it is an imperative duty of the state to select a corps of sanitarians, and through forms of law clothe them with power to embody existing sanitary science in rules and regulations, and endow them with means to enforce such rules and regulations, and at the same time, by observation and experiment, to acquire additional information that will enable them to more thoroughly protect the people of Indiana from avoidable zymotic disease, whether indigenous or imported.

Such a corps of sanitarians is known as a State Board of Health, and within a score of years more than half the states of this Union have established such boards whose good works have proclaimed the wisdom of their creation, and surely Indiana can not afford to allow her people to suffer from preventable disease. And it is on the shoulders of the medical profession that rests the obligation to inform the laymen of the state of their rights, privileges and duties in this direction. And it is an appropriate and paramount service of this society to urge upon the profession, the public, and above all, upon the legislature, that longer to delay the creation of a State Board of Health is sinning in the presence of light and knowledge; is an offense against the welfare of the people in progress, productive labor, and the happiness of health; and is such a neglect to avail of known remedies for the most serious of evils as will subject us to the contumely, and place us outside the sympathetic pale, of all enlightened people.

Touching the evil of proprietary medicines, we have serious doubts whether any legal regulations can be concocted that would have the effect to prevent their sale. Possibly the requirement that each package should bear a label stating the name and quantity of each ingredient the contained nostrum was composed of, as sug-

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gested by President Newland, might be of value in the proper direction, but it is doubtful—and, moreover, the difficulty and expense of determining whether the label contained the truth would be so great as to be a serious drawback, if not a positive bar to the enforcement of such a law.

Then, again, it is a conceded fact that no law can be adequately enforced where the sentiment of the people among whom it is to be enforced is not in harmony with the spirit and intent of the law, and it is exceedingly doubtful whether the people of Indiana would favor the suppression of the manufacture and sale of proprietary medicines.

We reach this conclusion with less regret because of our conviction that but comparatively few of these nostrums contain active ingredients in sufficient quantity to do positive mischief, and, therefore, the evil they accomplish is principally of a negative character, simply failing to produce any effect where timely active medication is demanded.

The best method of dealing with this difficult problem at this time that suggests itself to us is to call the attention of a competent State Board of Health to it, requiring that they gather the facts concerning it and thoughtfully work out a conclusion that shall indicate active interference, or what seems more likely, determine that, for the present at least, the condition of *laisses faire* is best.

There can be no doubt that the people of Indiana suffer from the service of incompetent medical practitioners, and there is no doubt, furthermore, that it is the duty of the state in some way to signalize to the public the persons who have qualified themselves for physicians, and to prevent charlatans and disreputable persons from imposing themselves on the community as competent and honorable practitioners of medicine.

Just how these results may be brought about is a vexed question. In the first place, there is the proud proposition that an American citizen, unchallenged for crime, has the inalienable right to do as he may please so long as he does not trespass on, nor abridge the rights of, his fellows, and this includes his privilege to call a quack doctor to his aid in illness if he so elects, and this right can not be curtailed under any circumstances without trampling down the dearest jewel in our democratic-republican crown. But it is apprehended that no man, guided by the reasoning of a sane mind, would call a man whom he knew to be incompetent to prescribe either for himself or his family when needing a physician, and in the light of our present knowledge we must hold it as conclusive that the only reason why so many medicasters find engagements with good citizens is because such citizens do not have the ability to correctly measure the qualifications of the charlatans who assert in winning ways their scientific acquirements and verifying experience. In no affair of equal importance is the average citizen so illy prepared to judge aright as in that of the qualifications of persons who proclaim themselves doctors in medicine. This is due to the very intricate and imperfect nature of medical science itself, and to the exercise of that most excellent, but frequently misleading, attribute of honest human nature which credits as true the claims of any one to special knowledge who asserts its possession in positive terms and in an agreeable manner, until fortunate circumstances or sad experience leads to a truer judgment, where assumption has played the role of merit. No class of men in civilized society understands these means of deception more thoroughly than charlatans claiming to be physicians, and no class plies them more audaciously or with higher success.

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Under this condition of affairs the duty of the state would seem to be plain and imperious. It should step in and, availing itself of the ample means within its easy reach, measure the qualifications of all who offer themselves as practitioners of medicine, and under liberal and enlightened rules of interpretation decide who have had the requisite training in schools and by experience, and give them a certificate to that effect, and compel all others to abandon the profession while in the state.

This has the semblance of a plain and understandable proposition, and a reasonable one. We regard it as a true and just one. Is any man prepared to gainsay it? Proceeding upon the supposition that the correctness of this position is conceded, the next step is to seek the agency by which the state may make the measurement of these qualifications. With one voice all judicious persons will name the medical profession of the state as the only agent competent to make the inquiry with satisfaction. But as medical men are to be the subjects of inquiry, and as but a limited number of doctors will be needed to make the examination, there must be some criterion by which physicians of conceded ability, to make the investigation, can be selected. Fortunately there need be little difficulty in accomplishing this object. Considerable numbers of the best physicians are associated together in legal organizations embracing the profession of the entire state. Undoubtedly the worthy members of the profession would be quite satisfied to submit their claims to recognition to the arbitrament of a corps of examiners selected by the State Society, acting in obedience to fundamental regulations to be prescribed by the statute giving them the authority to perform the service.

But there are four legal state organizations of physicians in Indiana, and each has a common fame for scientific attainments and medical skill that entitles it to recognition by the Legislature in the relation we are now discussing, and each of these organizations represents a class of doctors so radically different in their views of practical medicine from the others, singly and collectively, that no harmony in this particular is possible among them so long as each clings to its own faith. This state of facts places it out of the question for the members of one of these classes to conclude the examination of a member of either of the other classes. The test of fitness in a practitioner of medicine is his knowledge of therapeutics, and each class of doctors has its own peculiar theory and practice of therapeutics. All schools of medicine have a common foundation of elementary knowledge in anatomy, physiology, chemistry and the like, but in therapeutics the distinctions are broad, radical and irreconcilable. It would, therefore, be quite impossible for a regular physician to determine the completeness of a homeopathist's knowledge of therapeutics according to the homeopathic standard, and it is by that standard he must be adjudged; and it is equally beside the ability of a physio-medical doctor to judge of the therapeutic qualifications of an eclectic doctor according to the eclectic standard.

From these premises it is apparent that each class or school of physicians must be the judge of its own disciples, for by no other means can the best of the kind be recognized and certified, and those who assume to be learned, but are without merit, be detected and dismissed; and every doctor of every school, who has faith in the ultimate triumph and supremacy of the doctrines he advocates, may, without hesitation, join in the advocacy of this plan, because it is surely in the interest of

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the law of the survival of the fittest, in this wise: The four systems of medicine can not all be true; and giving them an equal legal footing and a fair field and common opportunity before the public to display their qualities, will be the very best method of opening their claims to the light of modern science and to the trial by experience, free to the inspection of all who choose to examine. It requires no logic to show that in this unostentatious way the relative success of the schools must eventually become apparent, and success, all other things being equal, is, after all, the only reliable test of superiority in medical practice. To such honorable method of comparison the public are entitled, as society is now organized; nor is it seen on what reasonable ground any disciple of any school can object to such ordeal.

As a means of expressing its sentiments in regard to the matters treated of in this report on President Newland's address, we offer to the society the following resolutions for adoption:

Resolved, As the sense of the Indiana State Medical Society, that the time has fully arrived when the people of Indiana are entitled to have the benefit of sanitary science applied to public affairs for the maintenance of the general health, and that it is the reasonable duty of the Legislature to establish a State Board of Health, with ample power and means to apply existing sanitary science, and to aid in its further development, and that this board should be composed of men noted for their acquirements in medical, hygienic, engineering, legal and executive knowledge.

Resolved, That the matter of proprietary medicines and patent nostrums should be turned over to the State Board of Health for their thoughtful consideration.

Resolved, That it is the duty of the state of Indiana, through her Legislature, to establish boards to inquire into the qualifications of all persons claiming the right to practice medicine in the state; and that while all should be required to have a competent knowledge of biological laws and elementary medicine, each class or school of doctors should be examined by a board composed of the members of its own guild.

Respectfully submitted,

JAMES F. HIBBERD.
WILSON HOBBS.

Dr. J. D. Gatch, of Lawrenceburg, Vice-President of the society, read his paper entitled, "Harmony, Associated Action in Connection with State Medicine," which, on motion, was referred to the Committee on Publication.

Dr. Wm. Lomax, chairman of the Committee on Credentials, submitted the following report:

Resolved, That all delegates from Fulton County Medical Society be refused admission to the society, owing to the fact that said county society is composed in part of irregular practitioners, and the attention of the Committee on Ethics is hereby called to the matter.

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Dr. J. L. Wooden, of Greensburg, submitted the following resolution:

WHEREAS, It is alleged that Dr. J. R. Beck, a delegate to this society from the Allen County Medical Society, did assault, kick and injure Dr. H. D. Wood, of Steuben county, in this hall, at or about 10 o'clock A. M. this day; therefore,

Resolved, That the Committee on Ethics be instructed to investigate said case and report a resolution for the immediate expulsion of the said Dr. J. R. Beck from this society as a delegate from the said Allen County Medical Society, if the facts warrant such punishment.

The President—These matters are both matters that come within the province of the Committee on Ethics, and will be referred to that committee by consent, if there be no objection.

There being no objection, the report of the Committee on Credentials, and Dr. Wooden's resolution were so referred.

Dr. J. W. Hervey, of Indianapolis, read his paper entitled "Some of the Unsolved Problems in Public Hygiene and Synteretic Jurisprudence," which, on motion, was referred to the Committee on Publication.

Dr. F. J. Van Vorhis, of Indianapolis, read his paper entitled "Expert Evidence—What is it?" which, on motion, was referred to the Committee on Publication.

Dr. Wm. Lomax, Chairman of the Committee on Credentials, submitted the following report:

The Committee on Credentials recommend that the delegates from Allen and Steuben counties be refused admission until their differences be settled by the Committee on Ethics.

The President—If there is no objection the report will be referred to the Committee on Ethics.

There being no objection, the report of the committee was so referred.

Thad. M. Stevens, M. D., Indianapolis, Secretary of the Indiana State Health Commission, submitted the following report of the work done by that commission during the past year:

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Gentlemen of the Indiana State Medical Society:

At its session of 1875, this society appointed a Committee on State Board of Health, composed as follows:

Thad. M. Stevens, M. D., Chairman, Indianapolis.
J. W. Hervey, M. D., Indianapolis.
G. W. Burton, M. D., Mitchell.
J. W. Athon, M. D., Indianapolis.

In 1876, Wilson Hobbs, M. D., was appointed to fill the vacancy caused by the death of Dr. Athon.

At the session of the Indiana State Medical Society of 1878, by resolution, as recorded in the Transactions of that year, page 150, the Committee on State Board of Health was formed into the Indiana State Health Commission, with power to add to their membership.

In accordance therewith, said Commission organized as follows:

Wilson Hobbs, M. D., President, Knightstown.
Thad. M. Stevens, M. D., Secretary, Indianapolis.
Geo. W. Burton, M. D., Treasurer, Mitchell.
James W. Hervey, M. D., Indianapolis.
Lemuel Moss, D. D., Bloomington.
John L. Campbell, LL.D., Crawfordsville.
E. T. Cox, State Geologist, Indianapolis.

Since our report to this society at its last session the State Health Commission has endeavored to gain the co-operation of both the profession and the citizens of the state and arouse their interest as to the subject of public hygiene.

During the year past the Commission has lost the valuable assistance of two of its members, Prof. E. T. Cox, late State Geologist, and Lemuel Moss, D. D., the first emigrating to other fields of labor, the latter resigning his membership on account of the press of duties connected with the State University.

In accordance with the resolution adopted by this society creating the Health Commission, the State Geologist was an *ex-officio* member thereof. The place left vacant by removal of Prof. Cox was therefore filled by John Collett, A. M., Ph.D., he being the Chief of the Bureau of Statistics and Geology.

There still remained a vacancy, created, as above mentioned, by the resignation of Prof. Moss. The Commission asks that such vacancy be filled with the name of S. H. Charlton, M. D., of Seymour, Ind.

At a meeting of the Health Commission, held December, 1879, a resolution was adopted authorizing the Secretary to select a physician in each congressional district to act as chairman of a local or district health commission, he to have power to appoint a member from each county medical society in his district on such commission. In accordance with such action the Secretary appointed the following gentlemen to serve as chairmen:

First District—S. E. Munford, Gibson county.
Second District—C. E. Laughlin, Orange county.
Third District—S. H. Charlton, Jackson county.
Fourth District—J. D. Gatch, Dearborn county.

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Fifth District—J. C. Smythe, Putnam county.
Sixth District—J. F. Hibberd, Wayne county.
Seventh District—
Eighth District—S. T. Schoville, Vigo county.
Ninth District—W. W. Vinnedge, Tippecanoe county.
Tenth District—J. A. Sutton, Fulton county.
Eleventh District—W. Lomax, Grant county.
Twelfth District—H. D. Wood, Steuben county.
Thirteenth District—G. L. Andrews, Laporte county,

We also forwarded a plan of organization to each chairman. All of these responded, and all but one or two accepted the position, and took an interest in the work offered. The vacancies will be filled.

The idea as to the formation of such local boards was inspired by the belief that in some such way a greater degree of interest would be taken and knowledge gained by the profession. During the coming summer we expect to have local commissions fully formed in each district.

The State Health Commission, with such branches, aided and supported by each member of county societies, presents an organization capable of doing all that is possible, in default of legal police power, which power can only be acquired by the formation of a state and local board of health by the Legislature of the state.

The budget of the Commission, sent by Governor Williams (with his special message) to the last General Assembly, and which, in some way, was subsequently lost, has been, with the exception of one paper, reproduced. This society, by resolutions adopted at its last session, ordered the budget printed in pamphlet form. It was supposed that the funds at the disposal of the society would be sufficient to carry out this order. The budget, together with the message, was, therefore, handed to John Collett, Chief of the Bureau of Statistics, to be published with, and form a part of his report. Reprints of such matter will be issued under the order of the society, as above mentioned.

For some reason there are some in the state, both medical and non-medical men, who confound the object of the Health Commission and the movement to have a State Board of Health with that of having a law "regulating the practice of medicine."

We regret that this mistake has occurred with any. The two objects are entirely separate, save that they both come under the head of medical legislation.

We apprehend that no difference of opinion can be held in regard to legalizing boards, both state and local, having control of public hygiene and vital statistics.

We hope that this society will continue to give assistance to this Commission in its endeavors to establish boards of health, recognizing that by so doing they advance among the institutions of the state and lend their example as active workers for the benefit of others. We have found many earnest co-workers, and several from whose advice we have profited.

The following resolution is offered to the society, with the request that it be adopted:

Resolved, That the Indiana State Medical Society shall request each county medical

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society to require each of its members to keep a record of births, and sex of those born, of deaths and cause of death occurring in their practice, and a note of any epidemic or endemic disease in their precincts; also, such other facts in connection with vital and sanitary statistics as they may deem necessary, and report the same to the local commission as instituted by the State Health Commission, and the local commission shall report the same to the Secretary of the State Health Commission, for the purpose of making a condensed report to the State Medical Society, and that each county medical society shall issue blanks to each of its members, according to forms furnished by the State Health Commission, such forms to be paid for by the State Medical Society and distributed to the several societies by the Secretary of the State Society. The Secretary of this society shall notify the Secretary of each county society of this action. Blanks shall also be furnished the chairman and members of each district commission and Secretary of State Health Commission. The synopsis of a bill for formation of state and local boards of health, hereto attached, shall be endorsed by this society, and the State Medical Society shall also have published a sufficient number of the same, and reprints of the plan of organization of district health commissions and of this resolution, and cause them to be sent to members of each county society and members of the next General Assembly. The State Health Commission shall remain intact, as now organized, and with the powers already granted, and with such others as from time to time may be necessary until the establishment of a State Board of Health by the Legislature of the State. Respectfully,

THAD. M. STEVENS, M. D., *Secretary.*

WILSON HOBBS, M. D., *President.*

NOTE.—It will be seen by reference to the resolutions passed by the Indiana State Medical Society, and the plan of organization of local health commissions, that the health commission is virtually a State Board of Health with county boards, whose duties are to collect sanitary and vital statistics from every physician belonging to county medical societies. A complete chain is thus formed for the collection of such statistics, etc., with exceptions of—

1. Police power is needed to enable the state and local commissions to enforce sanitary measures for the prevention of disease, and the collection of statistics of births and deaths from all physicians and coroners in the state, and of marriages from county clerk.

2. The providing of means to defray the necessary expenses.

These two missing links must be supplied by the State Legislature. To this end the commission has labored, viz: That a bill shall be passed creating state and local boards of health, with all needed power conferred. T. M. S.

*Synopsis of a Bill to Establish a State Board of Health, and Collect Vital and Sanitary Statistics.**

SECTION 1. Provides for a State Board of Health for investigation of subjects relative to the health and lives of the people of the state, and superintendent of general quarantine.

SEC. 2. Provides for local boards in each county or township, and a health offi-

*Endorsed by the Indiana State Medical Society.

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cer who shall be a physician, with police power, and to whom all physicians, accoucheurs and coroners shall report births and deaths, etc., on blanks furnished them; the board to make reports to State Board; boards of incorporated cities and towns to report separately to State Board.

SEC. 3. The Clerk of Circuit Court to furnish county or township board blanks to report, as provided in section 2, and report all marriages to the State Board of Health.

SEC. 4. All physicians, accoucheurs and coroners shall report all births and deaths, etc., to the local boards.

SEC. 5. The clerk of any monthly meeting of the religious Society of Friends to report all marriages to county clerk.

SEC. 6. Each county clerk to keep books for registration and postoffice address of all physicians and accoucheurs in the county.

SEC. 7. Every physician, accoucheur and coroner shall register, as provided in section 6, and any one who shall fail to perform the duties prescribed by this act shall forfeit the sum of —— dollars, to be collected in any court of competent jurisdiction and on suit of the county clerk.

SEC. 8. The Secretary of the State Board of Health shall make report to the Chief of the Bureau of Statistics annually, who shall tabulate all statistics and preserve report.

SEC. 9. The Secretary and members of the Board of Health to receive reasonable compensation.

Plan of Organization of District Health Commissions in Indiana, as Adopted by the State Health Commission and Endorsed by the State Medical Society.

1. A physician in each congressional district, appointed by the Indiana State Health Commission, shall act as chairman to a District Health Commission, composed of one member of each county society in such district, auxiliary to the state society. Such member to be nominated by the chairman, for the sanction of the State Commission.

2. The duties of such local or district commission shall be to investigate the causes of disease, and propose means of preventing the same in their localities, and such other matters of like nature as required by the State Commission, and make report through its chairman to the Secretary of the State Health Commission upon call. The district commission shall be under the control of and report to the State Health Commission.

3. Each county medical society shall require its members to report the number of births and sex of those born, also the number and cause of deaths within their precinct, also a short note of any epidemic which they may have encountered during the year, and of any endemic diseases which may be prevailing in their locality; said report to be made to the members of the local health commission of their county.

4. The data thus gained shall be reported to the chairman of the district commission, and by him to the Secretary of the State Health Commission, who shall condense such, and report annually to the State Medical Society and to the Bureau of Statistics of Indiana.

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5. The local commission, in conjunction with the State Health Commission, shall labor for the establishment of a state and local boards of health, and for the formation of auxiliary societies in counties now destitute of them, for the purpose of having such counties represented in the local or district commissions.

The President—This paper will follow the course of the previous papers, under the rule adopted, and be referred to the Committee on Publication. The next thing in the order of business is the paper entitled "Sanitary Survey of Indianapolis, with Applications Thereof," by Thad. M. Stevens, M. D., of Indianapolis. As we are behind time with our programme this paper will be referred to the Committee on Publication without being read.

The next business before the society is the paper entitled "Women Physicians in Hospitals for Insane Women," by Mary F. Thomas, M. D., of Richmond.

Dr. Thomas read her paper, and on motion the same was referred to the Committee on Publication.

Dr. Hibberd, of Richmond—I understand there has been some little misapprehension as to the proper course that these papers are to take after being read. I am informed that it is supposed that many of these papers ought to go to a special committee, or to the Health Commission, and I now make the motion, that all of these papers read this afternoon be referred in a body to the Health Commission.

Dr. Harvey, of Indianapolis—I am in favor of that motion, but would offer an amendment, that an exception be made with regard to the communication of Dr. VanVorhis, entitled "Expert Evidence—What is it?" That does not really belong to the class of papers being now referred, and I think that ought to be referred to the Committee on Publication.

The amendment to the motion of Dr. Hibberd was carried.

The President—The question now recurs on the reference of the remainder of the papers read this afternoon to the Health Commission.

Motion as amended was carried and the papers so referred.

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Dr. S. S. Boyd, of Dublin, read his paper, entitled "Medical Legislation," which, on motion, was referred to the committee on publication.

The President—I will announce the Indiana State Health Commission, as now formed: W. Hobbs, M. D., of Knightstown; Thad. M. Stevens, M. D., of Indianapolis; S. H. Charlton, M. D., of Seymour; Z. W. Burton, M. D., of Mitchell; J. W. Hervey, M. D., of Indianapolis; J. Collett, Ph. D., of Indianapolis; and C. Campbell, LL.D., of Crawfordsville.

The next thing in the order of business is the "Memorial of Marion County Medical Society and a Bill of a Proposed Medical Law," by J. M. Kitchen, M. D., of Indianapolis.

Dr. Kitchen read his paper, and, on motion, the same was referred to the committee on publication.

Dr. Thad. M. Stevens, of Indianapolis, read his paper on "What are the Essentials of a Bill to Regulate the Practice of Medicine?"

The President—This paper will follow the course of the previous papers. The next business on the programme is the paper, "Legislation Necessary to Regulate the Practice of Medicine in Indiana," by J. F. Hibberd, M. D., of Richmond.

Dr. Hibberd—I really feel like I ought to preface my paper by some remarks in regard to its character. If I had known I was coming out here to such placid water, such easy sailing and such general good feeling, and that there was so little variety of opinion as to the essentials to be incorporated into the bill for the regulation for the practice of medicine, I should have written very differently, indeed. But many of you are aware, if, indeed, not all of you, that there have been some very pointed things said within the last year or eighteen months; that there has been a great deal of feeling manifested, and it was my understanding that I was to be here to-day to stand up in the advocacy of measures that had very little backing in the general body and among the active members of this society. I understood that I should be here to-day to attack, as my friend Dr. Kitchen has said, "the Marion county bill" in some of what I call its worst features. I have done so very point-

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edly, very earnestly and very conscientiously. Now, if my language seems strong, urgent and pointed, I hope the gentlemen of the society will understand that my words were written under a condition of things entirely different from the atmosphere that has surrounded us since about 12 o'clock last night; and I am sorry that my paper is so long. If I had known the good feeling here, I think I could have said all I had to say in five minutes. As it is, I am afraid I will occupy four times as much time as that.

Dr. Hibberd then read his paper and continued:

The principal objection made to having a committee of the kind suggested is the expense. I am prepared to say that it is my opinion, after very mature consideration, that the one plan would be no more expensive to the class to be examined than the other. I have some resolutions here appended to my paper, but in the present state of affairs I will not read them. Since I have arrived in the city of Indianapolis there has been a good deal of consultation about this matter, and at a very responsible meeting that was held last night, after a great deal of consultation and a great deal of talking over the matter—the meeting continued until midnight—I was requested to draw up some resolutions expressing certain sentiments, and I hold them in my hands and am prepared to read them. The adoption of any one of them will do away with the necessity of acting upon the rest.

The President—Your paper will follow the course of the other papers.

Dr. Hibberd—The society will understand that this is not my original proposition. I am only selected as the agent to present it here, and I do so very cheerfully. Whichever of the resolutions the society may adopt I will be entirely satisfied. I now move the adoption of the following resolutions:

Resolved, 1. That a law to regulate the practice of medicine in Indiana should require one board of examiners for each system or school of medicine in the state that has a state society or organization.

2. That a law to regulate the practice of medicine in Indiana should require one board of examiners for the state, to be composed of representatives of each system or school of medicine in the state in number corresponding to the numerical strength of the disciples of each school or system, as far as practicable.

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3. That a law to regulate the practice of medicine in Indiana should require one board of examiners in each congressional district for each system or school of medicine in the state that has a state society or organization.

4. That the law should authorize each state society or organization to select the members of the board of examiners from practitioners of its own professional faith.

5. That a law to regulate the practice of medicine in Indiana should require a board of examiners in each county, the members of which to be selected by the county society.

6. That a law to regulate the practice of medicine in Indiana should require every person who enters the profession after the law takes effect to be examined by a board of examiners, but such person must be a graduate of a medical college in good repute to entitle him to an examination.

7. That a law to regulate the practice of medicine in Indiana should require the board of examiners to recognize a diploma from a medical college in good repute as sufficient evidence of the qualifications of its owner to practice medicine, whether he be a practitioner in the state at the time the law takes effect, or begins the practice at any time thereafter.

8. That a select committee of five be appointed to embody the principles adopted in the foregoing resolutions in a bill for a law, with all necessary details, to be submitted, if possible, to this session of this society for its approval, with a view of having it presented to the next Legislature as a bill for a law to regulate the practice of medicine in Indiana, which has the approval and support of the Indiana State Medical Society.

Dr. Hibberd—I now move the adoption of these resolutions, and, Mr. President, I move the previous question on the question of their adoption, so as to cut off all debate. I do not do this of my own motion, but because I am instructed to do it.

The President—It is understood, of course, that only delegates are entitled to vote, and on a question of the importance of this one I will ask that there be a rising vote. I will appoint as tellers to count the vote, Dr. R. E. Haughton, of Indianapolis, and Dr. G. W. Burton, of Mitchell. As many as are in favor of the previous question upon the adoption of the series of resolutions offered by Dr. Hibberd will rise to their feet.

The vote being taken, the tellers reported 71 in the affirmative; noes not counted; so the motion was carried.

A second reading of the resolution was called for, and Dr. Hibberd read the first resolution.

The President put the question upon the adoption of the resolu-

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tion, and the vote being taken, the tellers reported 41 in the affirmative and 41 in the negative.

The President—Record me, Mr. Secretary, as voting in favor of the adoption of the resolution.

So the resolution was adopted.

Dr. Hibberd—That disposes of the resolutions down to the fourth. It does not define how they shall be qualified, nor how they shall be appointed, nor anything of that sort.

The President put the question upon the adoption of the fourth resolution, and the vote being taken, the tellers reported 49 in the affirmative; noes not counted; so the resolution was adopted.

Dr. Hibberd—Now comes the other proposition, the sixth resolution. (Reading it.)

The President put the question upon the adoption of the sixth resolution, and, the vote being taken, the tellers reported fifty-two in the affirmative; noes not counted; so the resolution was adopted.

Dr. Hibberd—Now that does away with the necessity for action on the seventh resolution. The eighth and last is as follows: (Reading.)

On motion, the eighth resolution was adopted, and the Chair requested to appoint the committee.

Dr. Thomas B. Harvey, of Indianapolis—I think the society has hardly done full justice to all the papers and plans suggested in reference to this matter. I move now that instead of taking the vote on the proposition to require an examination of every person who desires to enter the profession after the law takes effect, that we vote upon this question: Shall a diploma be sufficient to justify the issuing of a certificate to practice medicine?

The President—That question has been before the society, and is settled by the adoption of the resolutions. That was one of the propositions. The Chair will appoint the following gentlemen on this committee, and they will make their own selection of chairman: Dr. James F. Hibberd, of Richmond; Dr. P. H. Jame-

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son, of Indianapolis; Dr. J. W. F. Gerrish, of Seymour; Dr. S. W. Edwins, of Anderson, and Dr. F. W. Beard, of Vincennes.

Dr. Eastman, of Indianapolis—Mr. President, I have a resolution which I prepared to bring before the society, and I think it highly proper to present it now, as having some bearing upon this question of medical legislation. I would like to have an expression of the society upon it, because it seems to reach a class of irregular practitioners not heretofore reached. The resolution is as follows:

WHEREAS, It is believed that medical colleges ought to heed the voice of the organized profession, the county and state medical societies; and whereas, great injustice is done the profession by graduates of regular schools practicing irregular medicine; and whereas, such practitioners often advertise and show their diplomas, to the injury of the school and profession at large; therefore be it

1. *Resolved,* That, in the sense of this society, each county society ought to officially report the names of such irregular doctors as hold regular diplomas to the college issuing the diploma so held.

2. That, in the sense of this society, the college receiving such official notice, ought to revoke such diploma and publish conspicuously in their next annual announcement, the names of such as have had their diploma annulled.

On motion of Dr. Helm, of Peru, the resolution of Dr. Eastman was referred to the special committee on medical legislation just announced by the Chair.

The President—I believe the action of the society within the last hour gives more evidence of success in this direction than any action it has ever taken before. If there is no further business it is now in order to move an adjournment.

On motion, the society adjourned to meet at 8 o'clock P. M.

First Day.

EVENING SESSION.

The society met pursuant to adjournment, and was called to order by Vice-President J. D. Gatch, at 8 o'clock P. M.

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President J. R. Weist, M. D., of Richmond, then delivered his annual address, entitled "Problems in Relation to the Prevention of Disease."

On motion, the President's address was referred to the Committee on Publication, with instructions to print the same in the Transactions of the society.

Dr. Waterman, of Indianapolis—I move that 12,000 copies of the President's address be printed at the expense of the society for gratuitous distribution throughout the state.

The motion was seconded by Dr. Newcomer, of Indianapolis, and unanimously agreed to by the society.

On motion, the society adjourned, to meet to-morrow morning at 8:30 o'clock.

Second Day

MORNING SESSION.

THURSDAY, MAY 19, 1880—8:30 O'CLOCK.

The society met pursuant to adjournment, and was called to order by President Weist.

The Secretary announced the following Committee on Nominations, one delegate from each county comprising said committee:

Dr. Commons, of Union City, chairman of the committee appointed to consider the suggestions of the President, submitted the following report:

Gentlemen of the Indiana State Medical Society:

Your committee, to whom was referred the President's suggestions, beg leave to submit the following report:

1. We would recommend that the length of our sessions be extended to three days, and that the purposes of the sessions shall be for the reading and discussion

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of papers upon medical and kindred subjects, and for the transacting of business pertaining to the objects of the society, and not for social diversion.

2. As regards the publication of papers, we would recommend that all papers presented to this society be held as the property of the society, to be published in its Transactions as heretofore. But in order that their merits may be placed more generally before the profession we recommend the adoption of the following resolution:

Resolved, That the Secretary of this society be, and he is hereby directed to furnish free of charge a copy of our Transactions annually to each of the leading medical journals circulating in the United States which have a department devoted to reviews and notices of books, the Committee on Publication to determine what journals are embraced in the term, "leading medical journals."

3. As regards the President's suggestions relating to inter-state and district societies, we would recommend to the consideration of the county societies, and that we urge upon our several county auxiliaries, the discouraging of inter-state and district societies as tending to detract from the interest and energy of this society.

4. Regarding the appointing of delegates to the American Medical Association, we will recommend that hereafter the several county societies be required, at the time of appointing their delegates to this society, to nominate and forward to the Secretary of this society the names of delegates to the American Medical Association, the number of such nominations to be governed by the rules of said association; and all nominations for such delegates shall be confirmed by this society, which shall have power to fill all vacancies and supply all omissions of the county auxiliaries.

5. As regards the tenure of office in this society, we find that section 2, article 5 of our constitution provides that each officer "shall serve one year, and until another is elected to succeed him." We therefore recommend the establishment of the rule that all officers elect shall enter upon the duties of their respective office immediately on the final adjournment of each annual session of the society.

Respectfully submitted,

WILLIAM COMMONS, M. D.,
S. S. BOYD, M. D.,
S. H. CHARLTON, M. D.,
Committee.

Dr. H. R. Louder, of Greene county—There are several sections of that report, and it may be well to take them up *seriatim*. I make that motion.

The motion was agreed to.

The first and second sections of the report of the committee were read the second time by the Secretary and adopted by the society.

Upon the second reading of the third section of the report a motion was made to lay the same upon the table.

A rising vote was called for.

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The chair put the question, and the vote being taken, the tellers reported 54 in the affirmative; noes not counted; so the third section of the report was laid on the table.

The fourth section of the report was read the second time, and, on motion, adopted by the society.

The fifth section of the report was read, and the Chair put the question upon its adoption.

Dr. I. C. Walker, of Indianapolis—I desire to make a remark, before the adoption of this section of the report, in deference to the Treasurer elect, Dr. Kemper. It is this: that if this section of the report is adopted Dr. Kemper will not have the pleasure of handling the funds of the society but for a single day, because it was the opinion of the Secretary of the state society and myself, that the new officers elected last year did not come in until the opening of this present session, and consequently Dr. Kemper decided to leave the funds in my hands until this meeting. I desired that the society should know these facts before voting on the resolution.

The Chair put the question and declared the yeas to have it; so the section was adopted by the society.

Dr. L. D. Waterman, of Indianapolis—I have a motion to make in regard to that section laid upon the table (section third). I will read it as I have amended it:

"As regards the President's suggestion relating to the inter-state and district societies, we would recommend to the consideration of the county societies the question of encouraging or discouraging of inter-state and district societies, as to whether they add to or detract from the interest and energy of this society; that the delegates of these societies be requested to report by their delegations to this society at the next session of this society."

The President—Do you make that as an original motion?

Dr. Waterman—I make it as an original motion.

The motion was seconded.

Dr. Newland—I would just say this: The best thing for this society to do is to let well enough alone. Those of us who are engaged in district societies know that they work remarkably well,

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and we are entirely satisfied with them. I move to lay the motion of Dr. Waterman on the table.

After some discussion, Dr. Newland withdrew his motion to lay on the table. The motion was renewed by Dr. Davis, of Thorntown, and agreed to by the society; so the resolution of Dr. Waterman was laid on the table.

The President—I have the pleasure of introducing to this society Dr. W. H. Machett, of Ohio, who comes to us as a delegate from the Ohio State Medical Society.

Dr. Machett—Members of the Indiana State Medical Society, I am glad to be received by you with so much cordiality. I thank you for this reception. I feel glad that my state society thought enough of me, an humble member, to make me a delegate to this society; and when I make my report to the Ohio State Medical Society on the 15th of June, at Freeland, they will be honored at this reception of their delegate. I did not come here for the purpose of entering into any discussion of your proceedings, but rather to renew friendships that I formed with a great many men from this state in years gone by. It was my fortune to be connected with the hospital in the first division of the Fourth Army Corps, where I formed the acquaintance of a great many of Indiana's noble sons, and I came here for the purpose of renewing those acquaintances and cementing those friendships, as well as learning from the wisdom of age, and being cheered by the sallies of youth.

Dr. Waterman, chairman of the Committee on Finance, submitted the following report upon the bill of the chairman of the Committee of Arrangements, which was, on motion, received and adopted by the society as read:

Mr. President and Gentlemen:

Your Committee on Finance would respectfully report that they have examined the bill, as presented against the society by the Committee of Arrangements, and would recommend the payment of the same in full.

L. D. WATERMAN, M. D.
F. M. BEARD, M. D.

Dr. James F. Hibberd, chairman of the Committee on Ethics, submitted the following report, which was, on motion, concurred in.

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To the State Medical Society of Indiana:

GENTLEMEN—Your Committee on Ethics have had under consideration the protest of Allen County Society against the admission of delegates from Steuben County Society, and respectfully submit the following report:

Allen county complains that Steuben county retains in her membership men who are unworthy, and has received as a member one who was expelled from Allen County Society.

The facts are, Steuben County Society has in its membership one who was accused, tried, convicted, and underwent the penalty for a grievous misdemeanor, namely, the induction of a criminal abortion. But in relation to this case, we find that Steuben County Society, the citizens of the village where this member resides, and the Masonic fraternity, with whom he was associated, all believe that he was the subject of a malicious prosecution, and not guilty of the crime alleged. The citizens of the town, firmly believing his innocence, raised the money with which to pay the fine and costs assessed against him, and while he was undergoing imprisonment, which was part of the penalty, elected him to a responsible office. To these facts your committee have had evidence of a positive and demonstrated character; enough to convince us at least of the probable innocence of this member, of the crime laid to his door.

Your committee, moreover, beg leave to report that each county society is competent to judge and decide upon the fitness of application for membership, holding that it is not the province of the state society to dictate as to the qualifications for membership in the county societies, so long as they receive only those to membership who obey the laws of this state society, and observe in their deportment to the public and to each other a due respect to that excellent code of medical morals, the Code of Ethics of the American Medical Association.

In relation to the other cause of protest, that they (the Steuben County Society) have received into fellowship as a member, an expelled member of the Allen County Medical Society, the party who is said to have been so received has been before this committee and denied having ever applied to Steuben County Society for membership, or of having ever been informed that he had been elected to membership therein, and states that he is not now, never has been, nor does he desire to become, a member of that county medical society.

Your committee beg leave to report in favor of the dismissal of the protest of Allen County Society, and that the Committee on Admissions be and are hereby instructed to report immediately in favor of the admission of the delegates of Steuben County Medical Society.

From any further consideration of the subject your committee beg leave to be excused.

Respectfully submitted,

JAS. F. HIBBERD,
P. H. JAMESON,
J. W. F. GERRISH,
GEO. L. ANDREW,
MARSHAL SEXTON,
Committee on Ethics.

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On motion, the delegates to the convention from Ohio were invited to participate in the discussions of the society.

Dr. F. J. Van Vorhis—There has been some considerable difficulty in getting the names of gentlemen of the nominating committee, and I desire to offer this resolution:

Resolved, That the delegates appointed by the county medical societies be instructed hereafter to select a member of the nominating committee and forward his name to the Secretary at least ten days before the meeting of the state society.

The Secretary called attention to the fact that the resolution would do very little good unless it included the reports from the county societies, and to control that matter the by-laws would have to be changed.

Dr. Van Vorhis thereupon withdrew his resolution.

The President—Gentlemen of the society, I wish to introduce to you a large man and a small man. The large man is Prof. Ray, of Chicago, and the small man is Prof. Stevens, of Ohio, whom I now introduce to you.

Mr. Ray—Gentlemen of the Indiana State Medical Society:

I am very thankful for the courtesy extended to me. I do not stand in the light of a delegate to this convention, but simply in that of a visitor, and I can assure you that it gives me a great deal of pleasure to meet the medical profession of Indiana. Indiana stands as one of the states in which I have always, and always shall, I presume, feel a very great personal interest. It was the point at which I first settled when I came West from the old state of Virginia. It is the state in which I first chopped wood at seven dollars a month. It is the state in which I first taught school. It is the state in which I first opened Wilson's Anatomy, and it is a state scattered through which I have a great many friends and persons with whom I have been most pleasantly associated as a teacher. I can assure you all there is no state in the Union that stands closer to my heart than the good old state of Indiana, and, if my wishes are carried out, I can only say to you that when I am done with this world I hope to be buried in the good old state of Indiana.

The President—Dr. Stevens, gentlemen. Dr. Stevens edits the *Obstetrical Journal* over in Ohio, and he will deliver himself now.

Dr. Stevens—GENTLEMEN: I did not come to Indianapolis to take any part in person in the proceedings of this convention, but I thank you for your reception, and assure you that nothing gives me more pleasure than to come back once more

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and meet my old friends in this state. I have no such continued line of reminiscences to go over as my friend Dr. Ray speaks of, but there was a time when I was almost as familiar with every member of this society, personally, as I am with the members of my own state society in Ohio. It gives me more pleasure than I can express to you, because I am not in the habit of making platform talk, but I do say that it gratifies me exceedingly to see you all again and to renew my old friendships with the gentlemen here. I think this morning is the first time I have met them, perhaps, for ten years. I have simply to acknowledge formally your courtesy and to extend my thanks, and assure you of my continued appreciation.

The Secretary submitted the following report of the outgoing Treasurer, Dr. I. C. Walker, which was referred, with the accompanying vouchers, to the Committee on Finance:

INDIANAPOLIS, MAY 19, 1880.

I. C. Walker, M. D., Treasurer, in account with the Indiana State Medical Society:

To balance, May, 1879	$340 46	
To cash from Secretary Woolen	1,023 00	
		$1,363 46
By cash for Transactions	$599 60	
By cash for stationery	30 25	
By cash for stenographer	30 00	
By cash for postage, etc	28 50	
By cash for Harmonic Hall	20 00	
By cash for Secretary's salary	100 00	
By cash for Committee on Arrangements	46 65	
By cash for Committee on Publication	2 00	
		$857 00
Balance on hand		$506 46

Which has been paid G. W. H. Kemper, M. D., Treasurer.

I. C. WALKER, *Treasurer.*

The Secretary submitted the following report from the Committee on Credentials, which was, on motion, concurred in.

The Committee on Credentials, having examined the case of the Steuben County Society, recommend the admission of the delegates from said society.

W. LOMAX,
Chairman.

Dr. N. Field, of Jeffersonville, submitted the following preamble and resolutions:

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EVERY PHYSICIAN SHOULD BE HIS OWN APOTHECARY.

WHEREAS, The druggists and apothecaries of the state of Indiana, with, perhaps, a very few exceptions, are practitioners of medicine, so far as an office business is concerned, prescribing for ordinary diseases and administering their own compounds, thereby taking from regularly educated physicians a large amount of their appropriate and legitimate business; and,

WHEREAS, These druggists and apothecaries deal largely in patent medicines and quack nostrums, some of them of their own invention, advertising them in newspapers and by posters in public places; and,

WHEREAS, A considerable per cent. of the aforesaid druggists and apothecaries are not well qualified to fill prescriptions, being ignorant of chemistry, pharmacy and materia medica, in consequence of which they sometimes make dangerous and fatal mistakes in deciphering prescriptions; and,

WHEREAS, Such unworthy competitors for our office business are not, on any principle of right or justice, entitled to any part of the profits of our prescriptions; and,

WHEREAS, Patronizing such druggists and apothecaries is giving our sanction to and approval of quackery, secret nostrum vending, and all manner of fraud and impositions on the ignorance and credulity of mankind; therefore be it

Resolved, That, in view of these facts and considerations, and the code of medical ethics by which we propose to be governed, we can not consistently patronize such druggists and apothecaries as those described, but the dignity and honor of the medical profession alike demand that every regular-bred physician should purchase and dispense his own medicine.

Resolved, That persistence in giving druggists and apothecaries the profits of the prescription business, knowing them to be of the character described, is to give aid and comfort to empiricism, fraud and deception.

Dr. Waterman, of Indianapolis, moved to lay the resolution on the table.

The Chair put the question, and declared the "noes" to have it.

The question recurring upon the adoption of the resolution, the Chair put the question, and declared the vote in favor of the resolution; so the resolution was adopted.

Dr. Harvey, of Indianapolis—I move, Mr. President, that the State Medical Society of Indiana send greeting to the Kentucky State Medical Society, and the Illinois and Missouri State Medical Societies, now in session.

The motion was agreed to.

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Dr. Gatch, of Lawrenceburg—I move that when this society adjourn its present session, it be to meet on the first Tuesday in May, 1881.

The motion was agreed to—yeas 35, nays 14.

The Secretary submitted the following report from Dr. W. Hobbs, chairman of the committee appointed last year to attend upon the funeral obsequies of Dr. Mears, which was read, and, on motion, referred to the Committee on Publication:

To the Indiana State Medical Society:

MR. PRESIDENT AND GENTLEMEN—At the closing hour of your last session the undersigned was appointed chairman to select a committee and attend upon the obsequies of Dr. Mears, who had then just departed this life, and to present to the bereaved widow and family the resolutions of respect and condolence, by you submitted to me for that purpose. In accordance with this instruction I associated with me the following gentlemen, viz:

Dr. G. N. Fitch, Logansport.
Dr. Marshall Sexton, Rushville.
Dr. N. Field, Jeffersonville.
Dr. James Ford, Wabash.

On the following day, being Thursday, May 22, 1879, we attended the obsequies in a body as representatives of your respect and honor of the veteran hero. And on the afternoon of the same day we visited the family and presented to them the resolutions by you submitted to us, with such words of comfort as the occasion presented. The mourning group were overcome by these testimonials of your honor and respect, and with great gratitude accepted them with an expression of the sense of their high appreciation of this your distinguished consideration. The eminent son of the honored sire, who made the acknowledgment on behalf of the mother and family, expressed peculiar satisfaction at this consideration by you, and desired that we should report to you, as we now do, their thankfulness and gratitude for your action in the case.

WILSON HOBBS, M. D.,
Chairman of Committee.

KNIGHTSTOWN, IND., May 18, 1880.

Secretary Woolen—Mr. President, I would say to the society that I received, yesterday evening, a pretty extended notice of the death of our late President, Dr. Humphreys, who died a few days ago at his home in South Bend. He was a very distinguished man of the profession in this state, one whom we honored with the presidency of this association, and one whom we will all mourn the loss of. I will move that a committee of three be appointed to express the

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sense of this society in relation to the death of the late President, Dr. Humphreys.

The motion was agreed to.

The President—The committee will be announced hereafter.

Dr. Mavity, of Kokomo—I hope the action of the society in regard to changing the day of meeting from the third to the first Tuesday in May will be reconsidered. I opposed the change, therefore I can not move to reconsider; but that will be election day, and I hope that the mover of the resolution will change it to the second Tuesday in May.

Dr. Gatch—As I advised all the physicians to attend the primaries, I will change my motion, if there be no objection, and make it the second Tuesday, instead of the first.

The President—There being no objection, the motion will be so modified by consent. When the society adjourns to-day it will be to meet on the second Tuesday in May, 1881, instead of the first, as provided in the original resolution.

Dr. Wm. Commons read his paper entitled "Ergot—Its Use and Abuse," which was, on motion, referred to the Committee on Publication.

Dr. F. J. Van Vorhis, of Indianapolis—I have a motion I wish to make in place of the resolution I withdrew a few minutes ago.

Moved, that Section 5 of the By-laws be amended to read:

SEC. 5. Every county society shall, at least thirty days before the annual meeting of this society, make a full and correct catalogue of its members in good standing at the time, and transmit the same at once to the Secretary of this society. If the name of a member is omitted from this catalogue that was contained in the last preceding catalogue, the county society must explain the omission by stating whether the member whose name is omitted is dead, has withdrawn, has been expelled, suspended, or whatever is the fact; and no one not a member in good standing in his county society can be a member of this society.

And moved, further, that Section 9 of the By-laws be amended so as to read:

SEC. 9. The delegates to this society shall be appointed by the county societies at the time the county societies are required to make this annual catalogue of members, and the names of the delegates, one of whom shall be designated to act as a member of the Nominating Committee to be appointed at the next meeting of the

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society, shall be forwarded to the Secretary of this society as soon as they are appointed.

The motion was agreed to.

Dr. W. R. McMahon, of Huntingburg, read his paper, entitled "Icteric Form of Pernicious Fever," which was, on motion, referred to the Committee on Publication.

Dr. Hibberd, from the Committee on Ethics, submitted the following report:

In the matter of appeal from the action of the Cass County Medical Society. Dr. G. N. Fitch:

The papers in this case are voluminous, and not in good order for speedy examination. After full examination of the papers we found that the first question for us to settle was the nature of the proceedings of the Cass County Society on the 26th of February, 1880. Prior to this, charges had been filed against Dr. Fitch for unprofessional conduct. These had been referred to a committee, and this day the committee reported and was discharged. The committee's report was, in effect, that they had accomplished nothing, and asked further instructions. At this point a motion was made by Dr. Justice, who swears that it was that this matter be referred to Dr. Fitch and the gentleman who made the charges, for settlement between themselves, where all such frivolous affairs should be adjusted. In this Dr. Justice is sustained by the sworn testimony of the Vice-President of the society, who seconded the motion, and by the President of the society, who put the question and announced the result. This would, of course, discharge the society from the further consideration of the subject. But the certified copy of the minutes of the society, by the Secretary, shows that Justice's motion was that the further consideration of the subject be laid over until the next meeting of the society, and that in the meantime the matter be referred to the gentlemen for settlement between themselves.

Your committee can hardly think it possible that the gentleman who made the motion, the gentleman who seconded it, and the officer who put it to vote, could be mistaken in the structure and intent of that motion, and they each swear to precisely the same facts. We do deem it possible that the Secretary, without intending prejudice to any one, might misapprehend a verbal motion and make an erroneous record accordingly on the minutes of the society.

We hold, therefore, that the minutes of the Cass County Medical Society on the 26th of February, 1880, concerning the motion of Dr. Justice in relation to the charges against Dr. Fitch, are erroneous, and that in fact the society was at that time discharged from its further consideration. We find that after this, and before the action of the society in expelling Dr. Fitch, he had withdrawn from the society, as he had a right to do, so far as we are advised, no copy of the laws of the society having been furnished us, and at the time of his expulsion he was not subject to the jurisdiction of the society. Respectfully submitted,

JAMES F. HIBBERD,
Chairman.

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Dr. N. W. Cady, of Logansport—I move that the report of the committee be referred back to the Cass County Society for settlement.

After some discussion, the Chair put the question, and declared that the motion was lost.

On motion, the report of the Committee on Ethics in relation to this matter was received and ordered to be placed on file.

Dr. Hibberd—The Committee on Ethics desire also to make the following report:

Concerning the charges of unprofessional conduct made by Dr. G. N. Fitch against Dr. W. H. Bell, your Committee on Ethics beg leave to report back the papers in the case, and recommend that they be transmitted to the Cass County Medical Society for its action in the premises, it being the law and usage for all complaints of this kind to have original consideration in county societies.

Respectfully submitted, JAMES F. HIBBERD,
Chairman.

On motion, the report of the committee was concurred in, and the matter referred back as recommended by the committee.

Dr. Hibberd—The Committee on Ethics submit also the following report:

The resolution touching the conduct of Dr. J. R. Beck in assaulting Dr. H. D. Wood, has been considered by your Committee on Ethics, and they now report:

We find that the assault was committed on the morning of the 18th, and in the hall of this society before the society had been formally called together. Dr. Beck admits the assault, and claims justification in the anger excited by profane, vulgar and indecent language toward him made use of by Dr. Wood the instant before the assault. Dr. Wood admits the use of language that we deem profane and vulgar, but alleges that he used it in good humor, and with no thought of insult or offense to Dr. Beck, but denies having uttered the language attributed to him by Dr. Beck. We were unable to find any testimony to corroborate the declaration of either party. We deem the affair a very great outrage upon the character and good name of this society, violating its ethics, and seriously staining our reputation as gentlemen, guided by the amenities and bearing of cultivated and refined society, as well as physicians.

We therefore recommend that Dr. J. R. Beck be publicly reprimanded by the President of this society, in the presence of the society, and that he be suspended from membership in this society until the close of its annual meeting in 1881.

We further recommend that Dr. H. D. Wood be reprimanded by the President of this society, in the presence of the society, for conduct unbecoming a physician.

Respectfully submitted by order of the Committee,
JAMES F. HIBBERD,
Chairman.

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Dr. Commons, of Union City—Before the report of the committee is concurred in, I would move to amend the recommendation of the report by striking out the words "and that he be suspended from membership in this society until the close of its annual meeting in 1881."

Dr. J. R. Beck, of Fort Wayne—I would simply say to the society, that if the society directs me to apologize I am willing to do so. I acted in the heat and excitement of the moment, and under what I considered strong provocation. I ask the society as a measure calculated to do justice to a working member—I have never been a drone in this hive—to strike out that portion of the report of the committee relating to suspension.

Dr. Commons' motion to strike out was agreed to.

The question recurring upon the original motion, the report of the committee, as amended, was concurred in.

The President—Dr. Beck, of Fort Wayne, you, having been charged with conduct disgraceful and a reproach to the society, the Committee on Ethics reporting that the charges were sustained, and their report having been accepted by the society, it becomes my very unpleasant duty to publicly reprimand you for this conduct that you have been guilty of, that the society has decided was a reproach to you, to the profession and to the society. Is Dr. Wood present?

Dr. Wood—May I make one remark?

The President—Yes, sir.

Dr. Wood—I am pained to have to make any remarks under the circumstances. Dr. Beck and I have been intimate friends for years, and as I passed him yesterday morning I made a remark—not thinking to aggravate him to anger in the least—as he and I have done very frequently before. If I had thought that it would have tempted him in the least, or in the least insulted him, I could not have made the remark. It is not in my nature to do it, as all the friends here present will testify. The remark that he said I made, I never made to any gentleman, either Dr. Beck or any

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other man. Never in my life have I said the words that he said to the committee that I did say.

Although, gentlemen, I ask your pardon, and feel it very much that anything of this kind should come before the society, even when I attempted to ascend the steps for my hat, which Dr. Beck had knocked off, I did it with good feeling, as Dr. Eastman of this city will state. There was no anger then upon my part; neither, gentlemen, has there been since. Not an angry thought did I have towards Dr. Beck, or else I should not have attempted to ascend the stairs in front of him to receive the wound I received. It was all uncalled for and unasked for. If I must be reprimanded for it, so be it. I accept it at your hands.

Dr. Martin, of Greenfield—Mr. President, none of us in this part of the house understood the motion to include Dr. Wood, and if the Chair so decides I move a reconsideration of that vote.

Dr. Martin not being competent to make the motion, having voted with the minority, the Chair ruled the motion out of order.

Dr. Thad. M. Stevens, of Indianapolis—Mr. President, I will make that motion.

The motion was agreed to.

The question recurring upon the recommendation of the committee that Dr. Wood be publicly reprimanded, the same was, on motion, laid on the table.

The President—I will announce as the Committee of Arrangements for the coming year the following gentlemen: Drs. John A. Sutcliffe, T. N. Bryan, Joseph Eastman, John R. Featherston and Henry Jameson, of Indianapolis.

The paper, "Antipyretic Treatment of Typhoid, Lung and Puerperal Fevers," by A. Henly, M. D., of Fairmount, next in order on the programme, and also the unassigned paper, "A Case of Twins, Artificial Delivery, Death," by the same author, were referred to the Committee on Publication without reading, Dr. Henly, at his own request, to be permitted to revise the same.

Dr. J. R. Beck, of Fort Wayne, read his paper, entitled, "Re-

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port of Two Cases of Tumors of Anterior Wall of Vagina," which was, on motion, referred to the Committee on Publication.

The President announced the committee to report appropriate resolutions upon the death of ex-President Humphreys as follows: Dr. G. L. Andrew, of Laporte, Dr. G. V. Woolen, of Indianapolis, and Dr. John Moffett, of Rushville.

The President—I will appoint as the committee recommended to memorialize the Legislature in relation to woman physicians in hospitals for insane women, Drs. J. A. Comingor, of Indianapolis; J. H. Helm, of Peru; S. S. Boyd, of Dublin; N. Field, of Jeffersonville, and Mary Thomas, of Richmond.

Dr. J. R. Beck, of Fort Wayne, offered the following amendment to the constitution, action on which, according to the rules of the association, was postponed until the next annual meeting of the society.

Amend Article 3 of the constitution of the society by adding an additional section, to be known as Section 3, to read as follows:

"All members of this society must be members in good standing in the society of the county in which they live, if there be a society there, and if not, then in the society of some adjoining county; but in no case shall a membership in more than one county society be permitted, and no society shall admit to its membership a resident of a county in which a society auxiliary to this shall exist.

Dr. C. B. Stemen, of Fort Wayne, read his paper on "Gall Stones, with a Death," which was, on motion, referred to the Committee on Publication.

Dr. Benjamin Newland, of Bedford, chairman of the Committee on Nominations, submitted the following report, which was concurred in by the society:

Thomas B. Harvey, President, Marion county.
John D. Mitchell, Vice-President, Vigo county.
E. S. Elder, Secretary, Marion county.
G. W. Burton, Assistant Secretary, Lawrence county.
G. W. H. Kemper, Treasurer, Delaware county.
F. J. VanVoris, Librarian, Marion county.

The Committee on Nominations returned the following as delegates to the American Medical Association, to meet in New York City, June 5, 1880:

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C. Q. Shull, Blackford county.
D. R. Walker, M. H. Bonnell, E. W. S. Hilligos, Boone county.
Charles Angell, Carroll county.
W. H. Bell, Cass county.
G. G. Barton, Daviess county.
H. C. Vincent, George Sutton, M. H. Harding, C. B. Miller, Dearborn county.
F. L. Putt, Elkhart county.
V. H. Gregg, Fayette county.
I. M. Gray, P. P. Whitesell, Hamilton county.
N. P. Howard, Sr., S. A. Troy, Hancock county.
John Ray, Henry county.
F. M. Pearman, I. J. Becknell, Kosciusko county.
John Dancer, Lagrange county.
L. S. Keen, Laporte county.
J. H. Helm, Miami county.
T. J. Bellis, W. V. Wiles, Owen county.
A. Leslie, I. R. Adams, Pike county.
R. F. Stone, C. B. McNary, Putnam county.
I. C. Webster, Tippecanoe county.
J. F. Hibberd, J. R. Weist, Wayne county.
Ben Newland, G. W. Burton, S. A. Rariden, Lawrence county.
W. Bracken, Decatur county.
J. A. Meek, H. D. Reisner, A. Henley, W. Lomax, L. Williams, Grant county.
Theophilus Parvin, Henry Jameson, R. N. Todd, Thomas B. Harvey, I. C. Walker, F. S. Newcomer, Marion county.
G. W. Smith, R. P. Davis, L. M. Davis, Randolph county.
J. R. Beck, Allen county.
W. R. McMahan, Dubois county.
S. J. Young, W. F. Swofford, L. E. Carson, Vigo county.
A. M. Vickery, Tipton county.
J. D. Maxwell, Monroe county.
D. McClure, Parke county.
Graham N. Fitch, Pulaski county.
J. Hanna, Green county.
Thomas Gifford, Franklin county.
A. Patton, F. M. Harris, Knox county.
A. W. Reagan, C. Robinson, Morgan county.
J. Barker, Hendricks county.
B. F. Spann, S. W. Edwins, John Cook, C. S. Burr, H. E. Jones, Madison county.
C. B. McNary, R. French Stone, G. C. Smythe, Putnam county.
S. H. Charlton, W. E. Whitehead, Jackson county.
D. A. Wells, J. G. Mavity, J. K. Thompson, Benton county.
M. F. Crain, T. F. Wood, H. D. Wood, S. A. Wood, Steuben county.
W. H. Ristine, W. L. May, Montgomery county.
W. H. Mavity, E. A. Armstrong, Howard county.
G. W. Hays, W. S. Cole, Fulton county.

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The following papers were referred to the Committee on Publication without reading, at the request of the authors: "Diseases of the Cervix Uteri," by James Lamb, M. D., Aurora; "Placenta Previa and Occult Hemorrhage," by E. S. Elder, M. D., of Indianapolis; "Report of a Case of Umbilical Hernia, with Remarks," by A. A. Hamilton, M. D., of Marion.

On motion, the society adjourned.

Second Day.

AFTERNOON SESSION.

The society met at 2 o'clock P. M., pursuant to adjournment, President Weist in the chair.

Dr. Thad. M. Stevens, of Indianapolis, submitted the following, and the resolution recommended therein was adopted:

As the chairman of the Committee on Publication in his report requested the action of this society as to how many reprints of the budget of the State Health Commission should be issued, therefore,

Resolved, That three thousand copies be ordered published by the committee for distribution by the State Health Commission.

Dr. J. S. McMurry, of Frankfort, read his paper, entitled "Death from Heart Clot," which was, on motion, referred to the Committee on Publication.

Dr. Joseph R. Beck, chairman of the special committee appointed to consider the subject of a mutual aid association among physicians, submitted the following report:

Your committee to which was referred the communication of Dr. Beck, of Allen county, bearing upon the subject of a mutual aid feature to be added to this society, would respectfully report as follows:

1. That the matter is deemed to be feasible, if conducted upon a liberal plan,

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and can be made productive of an infinite amount of good to the families of the members of this society.

2. That this committee would prefer to have more time in which to elaborate a report, and to make inquiries of those state societies which have already adopted this feature; and, therefore, your committee would respectfully ask to be continued until next year, and allowed to make a final report then.

JOSEPH R. BECK, M. D., *Chairman.*

Dr. Waterman, chairman of the Committee on Finance, reported that his committee had carefully examined the Treasurer's report and accompanying vouchers, and found them to be correct.

The President announced the Committee on Publication for the ensuing year, as follows: Drs. Allison Maxwell, Chairman; John Chambers, Thad. M. Stevens, E. S. Elder, of Indianapolis, and G. W. H. Kemper, of Muncie.

Dr. W. S. Haymond, of Indianapolis, read his paper on "Human Longevity, and the Hygienic Conditions Essential to Extend Life to its Full Limit," which was, on motion, referred to the Committee on Publication.

Dr. J. R. Beck, of Fort Wayne, chairman of the Committee on Necrology, submitted the report, which was, on motion, accepted.

On motion of Dr. I. C. Walker, of Indianapolis, the Secretary was instructed to draw an order on the Treasurer in favor of Dr. Beck for the amount of his expenditures as chairman of the said committee—$7.67.

On motion of Dr. J. R. Weist, of Richmond, the present Committee on Necrology, of which Dr. Beck is chairman, was continued for another year.

Dr. J. F. Hibberd, of Richmond, chairman of the Committee on Ethics, submitted the following report, which was, on motion, accepted.

Touching the matter of notice of appeal by Dr. W. H. Myers from the action of the Allen County Medical Society in expelling him from the society, which has been referred to your Committee on Ethics, we have to report that the papers in our hands are not such as we suppose the laws of the Allen County Society require to be taken in cases of appeal, and certainly are not such as this society authorizes its Committee on Ethics to accept as a foundation for the consideration of an appeal. We suggest that this society recommend to Dr. Myers to get up his appeal

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papers in accordance with the laws of the Allen County Society and the regulations of this society, and present them to this society in ample time for action at the annual meeting in 1881. Respectfully submitted,

JAMES F. HIBBERD, *Chairman.*

Sundry gentlemen, members of the Dearborn County Medical Society, protest against the admission of the representatives of the Franklin County Medical Society, because the latter has elected as its President a doctor who practices an exclusive dogma in medicine instead of scientific medicine, and that the society has declined to displace its President after being notified of his irregularity. The papers in the case have been referred to your Committee on Ethics, and we have taken testimony in the case. We find that the President of the Franklin County Society graduated from an eclectic school of medicine in Cincinnati, Ohio, in 1854; that he served four years as surgeon in the army; that for many years he has professed to practice scientific medicine, making no public claim to eclecticism; that many regular physicians have consulted with him for a long period, and at such consultations he exhibited no evidence of practicing dogmatic medicine; that he was elected to the society of which he is President now without a question as to his regularity; that he sent his son to the medical college of Ohio for his education in the profession, where he graduated about four years ago, and that except in the fact of his graduation in an eclectic school twenty-six years ago there is nothing to taint the professional reputation of Dr. Averbeck as a regular physician in good standing. Under these circumstances your committee recommend that the Franklin County Medical Society be allowed to put its own estimate on the professional standing of its President, and that the representatives of the society be received by this society as delegates from a society in good fellowship.

Respectfully submitted,

JAMES F. HIBBERD, *Chairman.*

Dr. Waterman, chairman of the Committee on Finance submitted the following report:

In accordance with the recent custom of this society, your committee recommend that one hundred dollars be paid to the Secretary, Dr. G. V. Woolen, for his services during the year 1879–80.

L. D. WATERMAN.
F. W. BEARD.

On motion, the report of the committee was received, and the recommendation therein contained concurred in.

The special committee appointed to take appropriate action upon the death of Ex-President of the society, Dr. Humphreys, submitted the following report, which was, on motion, received and ordered to be published in the proceedings of the association, by rising in silence:

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Having learned, with sincere regret, of the death of Dr. Lewis Humphreys on the 9th inst. at his home in South Bend, after a prolonged and painful illness, the Indiana State Medical Society, of which he was, almost from its organization, an honored member and former President, desires to place upon record its sense of his personal and professional character; be it, therefore,

Resolved, That, in the death of Dr. Humphreys the profession of medicine in our state has sustained the loss of one of its most active and beloved members.

Resolved, That we extend the hearty sympathy of our society to the bereaved family and friends of the deceased, and that the Secretary be directed to forward a copy of this action to his family.

GEORGE L. ANDREW,
JOHN MOFFETT.
G. V. WOOLEN.

Secretary Woolen read the following dispatch from the Illinois State Medical Society, in session at Belleville.

BELLEVILLE, ILL., MAY 19, 1880.

To the Indiana State Medical Society, Indianapolis:

Thanks for your kind remembrance, congratulations on your large and interesting meeting. We hail you as brothers, and bid you God-speed, in behalf of the Illinois State Medical Society, in session at Belleville, Ill. E. INGALS, *President.*
S. J. JONES, *Secretary.*

Dr. Haughton, of Indianapolis, called up the following resolution, which was offered at the last annual session of the society and laid over in accordance with the rules:

Resolved, That we so change Article 2, Section 3, of the Constitution that all members may vote upon the business of this association.

On motion of Dr. Van Vorhis, of Indianapolis, the resolution was laid on the table.

Dr. E. W. King, of New Albany—I move that the following be incorporated in the by-laws of this society, under the head of "Concerning Members":

SEC. —. The names of all members who have served this society as President or Vice-President be incorporated in the Transactions annually, prefacing the list of members, and showing the year in which they served.

The resolution was adopted by the society.

Secretary Woolen—Here is a resolution regulating the length of articles to be read before this society:

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Resolved, That no paper read before this society shall consume more than ten to fifteen minutes time in being read. D. R. WALKER, M. D.

There being no second, no action was taken on the resolution.

Dr. Lomax, of Marion, offered the following resolution, which was adopted by the society:

Resolved, That the thanks of the Indiana State Medical Society are due, and are hereby tendered the Committee of Arrangements for the able and efficient manner in which they performed the arduous duties assigned them, which has contributed in a marked degree to the harmony and success of the business of the meeting.

Dr. Van Vorhis, of Indianapolis, submitted the following resolution, which was adopted by the society:

Resolved, That the thanks of this society be extended to Dr. Weist for the able manner in which he has presided over this society; to Dr. Woolen and Dr. Burton for their long, faithful and valuable services in the interest of this society.

Dr. R. N. Todd, of Indianapolis, claimed the attention of the society on a question of personal privilege.

Upon the conclusion of his remarks Dr. I. C. Walker, of Indianapolis, rose and, after some remarks, moved that the paper of Dr. Hibberd, entitled, "Legislation Necessary to Regulate the Practice of Medicine in Indiana," read before the association yesterday, be laid upon the table, and that it be not printed.

The motion was seconded.

Dr. Walker—That paper was not referred to the Publishing Committee, and was not disposed of. I simply propose to dispose of it in this way.

Dr. Stevens, of Indianapolis—That paper, with several others, was referred to the select committee. That committee has not reported.

The Vice President—My understanding was that it should be referred to the select committee.

Dr. Walker—I will be satisfied with this. I will be satisfied if the odious and insulting language be stricken from that paper. I shall appeal from the decision of the Chair if he means to rule that

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the matter has passed out of the control of the society. I will now move that the offensive language in that paper be stricken out, sentence by sentence.

Several Members—What is the offensive language?

A rising vote being called for, the Chair put the question and declared the ayes to have it.

Dr. J. L. Wooden, of Greensburg—The paper was referred to this special committee, and it is there for discussion and consideration. Dr. Hibberd stated, before reading the paper, that it was written under a misapprehension of the true condition of affairs here, and that it contained some things which he would not have written had he understood that matters were as he found them when he came here. Now I move that Dr. Hibberd's paper be not printed.

The motion being seconded, the Chair put the question, and declared the ayes to have it.

On motion of Dr. E. W. King, of New Albany, the paper, "Kakonemia, or Pernicious Fever," by S. C. Weddington, of Jonesboro, was referred to the Committee on Publication without reading.

Dr. Hibberd—I ask the privilege of making a verbal report from the select Committee on Legislation. I have just been instructed by them to say to the association that, although we sat up till midnight last night working on the features of a new bill, endeavoring to get up a synopsis that we could present here in writing—a synopsis that would outline just what we propose—we have been totally unable to get anything to present here. I have been instructed to come and say this much to the society, and ask that they will excuse us from making any further report at this time.

On motion of Dr. Todd, the committee was continued until the next annual session of the association, and granted further time to report.

Dr. P. H. Jameson, of Indianapolis, offered the following resolution:

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Resolved, That the Committee on Medical Legislation be instructed in favor of a draft for a law providing for nine districts in the state, for each of which there shall be a board of examiners representing each of the state medical organizations.

Dr. Weist, of Richmond—I move, as a substitute for this resolution, that this society instruct this committee to exercise their wisest judgment in relation to this whole matter, and draw up a bill accordingly, whether there shall be four boards, or six, or nine. I move that the entire matter be left with the committee for them to exercise their best discretion upon it.

The Chair decided both the resolution and the substitute out of order, the matter having been referred to the committee yesterday with certain instructions.

Dr. Jameson appealed from the decision of the Chair.

The vote being taken, the decision of the Chair was sustained.

Dr. Lowder, of Bloomfield, moved that the vote on the resolution adopted yesterday, requiring but one board of examiners, be reconsidered.

Dr. Edwins, of Frankton, moved to lay the motion to reconsider on the table.

The question being put, the Chair declared the yeas to have it; so the motion to reconsider was laid on the table.

On motion of Dr. N. Field, of Jeffersonville, Dr. Jameson's resolution was referred to the Committee on Medical Legislation for their consideration.

The motion was agreed to.

Dr. N. Field, of Jeffersonville—I move that the Committee on Medical Legislation be authorized to change the programme. I submit the following motion:

That the Committee on Medical Legislation be instructed to prepare a bill providing for dividing the state into nine districts, and that for each of said districts there shall be boards of examiners representing the several state medical organizations.

The Chair decided the motion out of order until the society should vote to reconsider its previous action in the premises.

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Dr. Edwins moved to lay the motion of Dr. Field on the table.

The motion was agreed to.

Dr. Elder, of Indianapolis—The Committee of Arrangements have in their possession the following papers, which I will move to refer to the Committee on Publication without reading: "A Case of Ovariotomy with Recovery," by Wm. Lomax, M. D., Marion; "Empyema," by A. A. Hamilton, M. D., Marion; "A Case of Twins, Artificial Delivery, Death," by A. Henley, M. D., Fairmount; "Etiology of Endemic Fevers," by N. Field, M. D., Jeffersonville; "Ergot—Its Use and Abuse," by W. Commons, M. D., Union City; "Diphtheria," by S. H. Charlton, M. D., Seymour; "Scarlatina," by G. W. Burton, M. D., Mitchell, and "A Case of Arsenical Poisoning," by Dr. A. G. Preston, of Greencastle.

Dr. Edwins, of Frankton—I desire to offer the following resolution:

Resolved, That the names of all the delegates to the American Medical Association appointed by the different county societies must be sent in to the Secretary of the State Medical Society at least thirty days, with report of delegates, etc., before the yearly meeting of said State Society.

The resolution was adopted.

On motion of Dr. Eastman, the Secretary was directed to draw an order on the Treasurer in favor of Dr. Allison Maxwell in the amount of fifty dollars, as compensation for his services as chairman of the Committee on Publication during the past year.

On motion of Dr. Elder, the Secretary was instructed to furnish credentials to such members of the association as desire to attend the American Medical Association, the number not to exceed the number of delegates to which the society is entitled.

Dr. Weist—I move to take from the table the motion to reconsider the action taken yesterday instructing the Committee on Medical Legislation to report a bill providing for one board of examiners.

The motion was agreed to.

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Dr. Weist—I now move to reconsider the vote taken yesterday in that matter.

The motion was agreed to.

Dr. Weist—Now, Mr. President, I move, as a substitute for the motion now pending, which is to instruct the committee to report a bill establishing one board for each of the schools—one central board for each school—that the entire matter be left with the committee.

The motion was agreed to.

Whereupon the society adjourned *sine die*.

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CONSTITUTION AND BY-LAWS

OF THE

INDIANA STATE MEDICAL SOCIETY

ARTICLE I.

TITLE.

The name and title of this society shall be THE INDIANA STATE MEDICAL SOCIETY.

ARTICLE II.

OBJECT.

The object of this society shall be to provide an organization through which the regular physicians of the state may be united in one great professional fraternity for the purpose of giving frequent and emphatic expression to the views and aims of the medical profession; to supply more efficient means than have hitherto been available for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for exciting and encouraging emulation and concert of action among its members; for facilitating and fostering friendly intercourse between those engaged in it; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; and for the promotion of all measures adapted to the relief of the suffering, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS.

SECTION 1. The members of this society shall consist of delegates from the various county medical societies of this state, organized in accordance with the pro-

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visions of this constitution, who shall serve one year, or until others are elected to succeed them.

SEC. 2. All members in good standing in the auxiliary county societies shall be members of this society in all its rights and privileges, except that none but delegate members shall transact the legislative business of the session.

ARTICLE IV.

COUNTY SOCIETIES.

SECTION 1. Any incorporated county medical society whose constitution embraces the objects of this constitution and the code of ethics of the American Medical Association shall, upon application, become auxiliary to the state society, and shall be entitled to one delegate for every five members, and one for every additional fraction of more than half this number.

SEC. 2. The names of the members of such county societies, with their post-office addresses, shall be certified by their respective secretaries, and forwarded to the Secretary of the state society, who shall enroll them in a book kept for that purpose; and each member shall be entitled to a copy of all the publications of this society upon the payment of its assessments.

ARTICLE V.

OFFICERS.

SECTION 1. The officers of this society shall be a President, Vice-President, Secretary, Assistant Secretary, Treasurer and Librarian.

SEC. 2. Each officer shall be elected by a vote of a majority of all the delegates present, and shall serve one year, or until another is elected to succeed him.

ARTICLE VI.

DUTIES OF OFFICERS.

SECTION 1. The President shall preside over the meetings, preserve order, call meetings when in his judgment the interest of the profession may require it, and perform such other duties as custom and parliamentary usage may require.

SEC. 2. The Vice-President shall assist the President in the performance of his duties, and, in his absence, preside over the meetings.

SEC. 3. The Secretary shall keep correct minutes of the proceedings of the society, and, when approved, fairly transcribe them in a book kept for that purpose. He shall have charge of all books and papers belonging to the society, excepting such as may properly belong to the Treasurer and Librarian, receive all moneys due the society, and turn them over to the Treasurer, keeping an account of the same; perform all other duties which the usage of corporate or organized bodies may require, and serve as a member of the Committee on Publication.

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SEC. 4. The Assistant Secretary shall assist the Secretary in the performance of the duties of his office.

SEC. 5. The Treasurer shall receive all moneys due the society, and pay all bills approved by the Finance Committee and countersigned by the President, keeping a correct account, and making a full detailed report of the same to the annual meeting of the society, and serve as a member of the Committee on Publication.

SEC. 6. The Librarian shall have charge of all the books, manuscripts (not specially belonging to the Secretary and Treasurer), instruments, specimens, preparations, and other scientific property belonging to the society, keeping a complete catalogue of the same, and report the condition of his department to the annual meetings of the society.

SEC. 7. The officers shall deliver all records, books, papers, funds and other property belonging to their several offices, to their successors, when they shall enter upon the discharge of their respective duties.

ARTICLE VII.

STANDING COMMITTEES.

At each annual meeting the President shall appoint the following standing committees, each to consist of five members, and to serve until their successors are appointed and enter upon the discharge of their duties, viz: A Committee on Arrangements, a Committee on Credentials, a Committee on Finance, a Committee on Ethics, and a Committee on Publication.

ARTICLE VIII.

DUTIES OF STANDING COMMITTEES.

SECTION 1. The Committee on Arrangements shall, if no sufficient reasons prevent, be mainly composed of members at the place where the next annual meeting is to be held, and provide suitable rooms and accommodations for the meeting, and in all matters not otherwise provided for, superintend and protect the general interest of the society.

SEC. 2. The Committee on Credentials shall examine and report upon the validity of the credentials of the delegates from the county societies.

SEC. 3. The Committee on Finance shall superintend the monetary affairs of the society, inspect and audit all bills and the accounts of the Treasurer, and recommend the assessment of such *pro rata* tax upon its members as may be required to defray the current and incidental expenses of the society.

SEC. 4. The Committee on Ethics shall examine and report, for the action of the society while in attendance upon its meetings, all cases of appeals from the county societies and complaints against members for non-professional conduct.

SEC. 5. The Committee on Publication, of which the Secretary and Treasurer shall be members, shall have charge of preparing for the press, and of pub-

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lishing and distributing such of the proceedings, transactions and memoirs of the society as may be ordered for publication. It shall supervise and edit all papers presented to the society and ordered to be published, and report its doings to each annual meeting.

SEC. 6. The standing committees shall keep regular minutes of their proceedings, and furnish an authenticated copy thereof, to be deposited with the Librarian.

ARTICLE IX.

VACANCIES.

All vacancies in offices, occurring in the interim of the meetings, shall be filled by appointment of the President.

ARTICLE X.

QUORUM.

SECTION 1. Two-thirds of all the delegates shall constitute a quorum competent to alter or amend the constitution.

SEC. 2. One-half of the delegates reported to the Secretary at any meeting shall constitute a quorum to transact any business, except to alter or amend the constitution.

ARTICLE XI.

POWERS AND DUTIES.

SECTION 1. The society shall have full power, and it shall be a part of its duties, to adopt such measures as may be deemed most efficient for mutual improvement, and for exciting a spirit of emulation among the members of the profession; for facilitating the dissemination of useful knowledge; for promoting friendly intercourse among its members; for the advancement of medical science, and for securing the objects set forth in Article II. of the constitution.

SEC. 2. It shall have power to censure or expel any member convicted of violating its provisions, or who may be guilty of any act which may be considered derogatory to the honor of the medical profession; to hear and decide appeals coming from auxiliary societies, and enforce the observance of the code of ethics.

SEC. 3. It shall have power to raise money of its members by a tax which shall not exceed three dollars annually upon each member.

SEC. 4. The society shall hold at least one meeting annually, and more, if deemed necessary for the promotion of its interests.

SEC. 5. It shall adopt a seal as the insignia of its corporate authority.

SEC. 6. The time and place of each succeeding meeting shall be determined by a vote of the society.

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ARTICLE XII.

FUNDS.

The funds of the society shall be applied exclusively to the promotion of its objects, as set forth in article two of this constitution.

ARTICLE XIII.

CODE OF ETHICS.

The society adopts, as a part of its regulations, the code of ethics of the American Medical Association.

ARTICLE XIV.

AMENDMENTS.

Every proposition for altering and amending the constitution shall be made in writing, and if such alteration or amendment receive the unanimous vote of all the delegates present, it shall be adopted; but if objection be made, it shall lie over until the next annual meeting, when, if it receive two-thirds of the quorum for amending the constitution, it shall be adopted.

ARTICLE XV.

SEAL.

The seal of the Indiana State Medical Society shall consist of a circular disc two inches exterior diameter, with an ornamental border or margin. Within this outer margin shall be, in Roman letters, "Indiana State Medical Society. Organized MDCCCXLIX." Within this another circle with the motto in Latin, Roman letters, "Physiologica medicina cautionis et curæ morborum vera scientia est." The center is occupied by figures of Esculapius with staff and scroll, Hygeia casting away the serpent, surrounded on base and sides by a wreath of leaves; to the rear and right of the figure of Esculapius an owl is perched.

The following is an impression of said seal:

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BY-LAWS.

ORDER OF BUSINESS.

SECTION 1.

1. The President shall call the meeting to order.
2. The Secretary shall call the roll of delegates.
3. The Chair shall appoint the Committee on Credentials, which shall report as soon as convenient.
4. Report of Committee on Arrangements.
5. Any business requiring early consideration may, by permission, be introduced.
6. Reading such parts of the minutes of the last meeting as may be necessary for the information of the society, such parts of said minutes to be selected in advance by the Secretary.
7. Report of the Secretary.
8. Report of the Treasurer.
9. Report of the Librarian.
10. Report of Committee on Publication.
11. President's address, if for the exclusive hearing of the society; otherwise, the fixing of the time for hearing said address.
12. Chair to appoint Committee on Ethics, which shall report as soon as convenient.
13. Chair to appoint Committee on Finance, to report as soon as convenient.
14. Reading of papers that have been forwarded by county medical societies, and such as have been prepared by special appointments.
15. Election of officers.
16. Introduction of new business.
17. Selection of time and place for next annual meeting.
18. Chair to appoint Committee of Arrangements.
19. Chair to appoint Committee of Publication.
20. Miscellaneous business.
21. Adjournment.

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LAW OF ORDER.

SEC. 2. The deliberations of this society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, unless otherwise determined by a vote of the society.

REPORT OF PROCEEDINGS.

SEC. 3. The Secretary shall employ a short-hand reporter at an expense not exceeding ten dollars per day, to report to him the proceedings of the society, and such report, when revised by him, he shall submit to the publishing committee for preparation for publication in the Transactions.

CONCERNING MEMBERS.

SEC. 4. The names of all members in good standing, and of all honorary members, shall be published annually in the Transactions.

SEC. 5. Every county society, at its regular meeting next preceding each annual meeting of this society, shall make a full and correct catalogue of its members in good standing at that time, and transmit the same at once to the Secretary of this society. If the name of a member is omitted from this catalogue that was contained in the last preceding catalogue, the county society must explain the omission by stating whether the member whose name is omitted is dead, has withdrawn, has been expelled, suspended, or whatever is the fact. And no one not a member in good standing in his county society can be a member of this society.

APPEALS.

SEC. 6. Any member of a county society who has been expelled, or otherwise brought under discipline and condemned, shall have the right of appeal to this society.

ASSESSMENTS.

SEC. 7. All assessments of money made by this society shall be *per capita* on all the members of all the county societies, and each county society shall collect the assessment on its members and forward the same to the Secretary of this society within the time named, and any county society that fails to comply with this requirement shall be held to be in contempt, and none of its members shall be allowed to participate in the business of this society until such county society shall have purged itself of the contempt.

SEC. 8. The annual assessment on each member of the county societies for the use of this society shall be one dollar, which shall be forwarded to the Secretary of this society with the annual catalogue of members, as provided in section five hereof.

DELEGATES.

SEC. 9. The delegates to this society shall be appointed by the county societies at the time the county societies are required to make their annual catalogue of

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members, and the names of the delegates shall be forwarded to the Secretary of this society as soon as they are appointed.

SCIENTIFIC BUSINESS.

SEC. 10. The scientific communications to this society shall consist of such papers as the county societies may order to be presented here, and the report of such special committees as may be appointed to write on selected subjects, and voluntary papers.

SEC. 11. The Committee of Arrangements shall examine all the papers submitted to them under the provisions of section ten, and determine the order in which they shall be presented to the society. The Committee of Arrangements shall have printed a programme of business for the use of members at each annual meeting.

AUXILIARY SOCIETIES.

SEC. 12. Any county society desiring to become auxiliary to this society may file a certificate of its compliance with the conditions of article four of the constitution, and the Secretary of this society shall be the judge of the sufficiency of such certificate until the next meeting of this society.

PUBLICATION COMMITTEE.

SEC. 13. The Committee on Publication shall construe section five of article eight, of the constitution, to authorize them to alter, curtail or reject any and all papers referred to them that do not belong to the business proceedings of the society; and any paper referred to them which they deem meritorious, but not suitable for publication in the Transactions, they may, in their discretion, return to its author and authorize him to offer it to a medical journal for publication, with the announcement that it has been read before the Indiana State Medical Society.

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LIST OF MEMBERS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ADAMS COUNTY.

Officers.

T. T. Dorwin.....President.
William H. Schrock.....Secretary.
Jonas S. Coverdale.....Treasurer.

Censor.

B. R. Freeman.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Dorwin, Thomas T.	Decatur		1880
Coverdale, Jonas S.	Decatur		1880
DeVilbiss, A. L.	Decatur		1880
DeVilbiss, Allen	Woagland		1880
Freeman, B. R	Decatur		1880
Smith, J. L.	Woagland		1880
Schrock, W. H.	Decatur		1880
Trout, D. G. M.	Decatur		1880

ALLEN COUNTY.

Officers.

Thomas J. Dills.....President.
Joseph R. Beck.....Secretary.
James S. Gregg.....Treasurer.

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Censors.

Christian B. Stemen. James S. Gregg. Samuel Anderson.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Anderson, Samuel	Fort Wayne		1878
AYRES, HENRY P.	Fort Wayne	Dropped	1874
Beck, Joseph R.	Fort Wayne		1874
Bray, Charles A.	Cecil, O.		1880
Brooks, William H.	Fort Wayne	Dropped	1874
Buchman, Alpheus P.	Fort Wayne	Dropped	1876
Dills, Thomas J.	Fort Wayne		1874
Dinnen, James N	Fort Wayne	Dropped	1879
Gobrecht, William H.	Fort Wayne		1879
Gordon, Charles W.	Wallen	Dropped	1879
Gregg, James S.	Fort Wayne		1874
Josse, John M.	Fort Wayne	Deceased	1874
Knode, Robert S.	New Haven	Dropped	1880
Mayer, Carl F.	Fort Wayne		1874
McCullough, Thomas P.	Fort Wayne	Dropped	1874
Proegler, Carl	Fort Wayne		1879
Rosenthal, Isaac M.	Fort Wayne		1875
Stemen, Christian B.	Fort Wayne		1878
Sweringen, Hiram V.	Fort Wayne		1878
Van Buskirk, Aaron E.	Fort Wayne	Dropped	1878
Wood, Hugh D.	Angola	Dropped	1876
Yuill, William R.	Ovid, Mich.	Dropped	1877

BENTON COUNTY.

Officers.

J. K. Thompson.....President.
A. W. Wells.....Secretary.
J. Kolb.....Treasurer.

Censors.

J. W. Barnes. J. S. Mavity. J. H. Whitcomb.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Barnes, J. W.	Oxford		1874
Beard, J. M. G	Ambia		1875
Dickson, J. M.	Fowler		1880
Green, J. W.	Boswell		1879

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Gray, James A	Otterbein		1875
Hardesty, W. R.	Boswell		1879
Kolb, J.	Oxford		1874
Killin, James	Aydelotte	Deceased	1875
Kidney, J. M.	Pine Village		1878
Mavity, J. S.	Fowler		1876
Thompson, J. K.	Otterbein		1874
Wells, A. W	Oxford		1874
Whitcomb, J. H.	Boswell		1875

BLACKFORD COUNTY.

Officers.

Peter Drayer ..... President.
D. T. Showalter ..... Secretary.
C. R. Mason ..... Treasurer.

Censors.

C. Q. Shull. H. C. Davisson. L. M. Jackson.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bennett, H. H.	Montpelier	Withdrawn	1872
Bennett, J. C.	Montpelier		1880
Drayer, Peter	Hartford City		1866
Davisson, H. C.	Hartford City		1866
Garrett, T. M.	Priam		1880
Jackson, L. M.	Hartford City	Suspended	1879
Landon, L. C.	Priam		1874
Mason, C. R.	Hartford City		1866
Mason, Samuel	Pennville		1875
Ranson, William C.	Hartford City		1872
Ranson, J. A.	Montpelier	Suspended	1866
Showalter, D. T	Montpelier		1879
Shull, C. Q.	Montpelier		1866
Wilt, W. W.	Montpelier		1873

BOONE COUNTY.

Officers.

A. G. Porter ..... President.
William P. Parr ..... Vice-President.
Thomas H. Lane ..... Secretary.
E. S. Woodey ..... Treasurer.

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Censors.

James A. Hamilton. D. C. Scull. James H. Heady.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Alford, James A.	Zionsville		1879
Bounnell, M. H.	Lebanon		1877
Bounnell, Thomas A.	New Brunswick		1876
Boyd, J. M	Thorntown		1873
Bennington, A. M.	Lebanon		1876
Cotton, H. T.	Zionsville		1880
Davis, D. B.	Thorntown		1875
Davis, W. H	Thorntown		1880
Duzan, George N	Zionsville		1877
Hardy, J. S	Whitestown		1877
Hamilton, J. A	Lebanon		1877
Heady, James H	Jamestown		1878
Heady, W. S	Jamestown		1879
Hilligos, E. W. S	Milledgeville		1878
Lane, Milton	Whitestown	Moved to Nebraska	1876
Lane, Thomas H	Lebanon		1873
Mendenhall, Nathan	Thorntown		1873
Nickey, A. S	Elizaville		1877
Porter, A. G	Lebanon		1873
Porter, John R.	Lebanon		1873
Porter, W. D.	Lebanon		1877
Parr, W. P.	Lebanon		1875
Parker, Joseph	Colfax		1876
Rodman, S. W.	Zionsville	Gone to Indianapolis	1876
Rose, M. S.	Thorntown		1873
Scull, D. C.	Lebanon		1879
Steelsmith, J. M	Elizaville		1877
Smith, C. H	Lebanon		1875
Sims, John F	Elizaville		1873
Shulse, W. H	Lebanon		1873
Tharpe, Levi	Colfax		1877
Trowbridge, R.	Lebanon		1880
Walker, D. R.	Reese's Mills		1880
Walker, Theodore	White Lick		1879
Williamson, R. A	Lebanon		1873
Woodey, E. S.	Thorntown		1875

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BROWN COUNTY.

Officers.

Joseph M. Cook.....President.
Richard E. Holder.....Vice-President.
Alfred J. Ralphy.....Secretary.
Nathan Browning.....Treasurer.

Members.

NAME.	RESIDENCE.	REMARKS.	ADMITTED.
Arwine, E. S	Bean Blossom		1880
Beaty, W. H	Need More		1879
Browning, Nathan	Pikes Peak		1879
Cook, Joseph M	Nashville		1879
Campbell, James B	Unionville		1880
Duncan, M. A	Nashville		1880
Genolin, John F	Nashville		1880
Holder, Richard E	New Bellsville		1879
Leonard, J. H	Elkinsville		1879
Moser, James P	Spiersville		1879
Ralphy, Alfred J	Nashville		1879
Smith, T. E	South Bethany		1880
Zook, A. A	Bean Blossom		1880

CARROLL COUNTY.

Officers.

Chas. Angell, Sr.....President.
G. Snyder.....Vice-President.
W. Smith.....Secretary.
W. F. Sharrer.....Treasurer.

Censors.

J. T. Richardson. E. W. H. Beck. S. T. Noland.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Angell, Charles	Pittsburg		1877
Armstrong, F. G.	Camden		1876
Beck, E. W. H	Delphi		1876
Cochran, J. N	Delphi		1876
Kennard, J. S	Yeoman		1876
Loup, W. M	Deer Creek		1876

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Noland, S. T.	Delphi		1876
Rowell, J. W.	Rockfield		1876
Richardson, J. T	Delphi		1876
Sharrer, W. T.	Rockfield		1876
Snyder, B. F.	Camden		1877
Snyder, L.	Camden		1876
Sterrett, J. E.	Burrows		1876
Smith, W.	Delphi		1876

CASS COUNTY.

Officers.

R. Faber.....President.
J. Z. Powell.....Secretary.
N. W. Cady.....Treasurer.

Censors.

A. B. Strode. B. C. Stevens. F. A. Busjahn.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Adrain, J. H.	Logansport	Withdrawn	1873
Bell, W. H.	Logansport		1873
Bradfield, Benjamin	Logansport		1880
Busjahn, F. A.	Logansport		1878
Cady, N. W.	Logansport		1877
Coleman, Asa	Logansport	Withdrawn	1873
Faber, R.	Logansport		1873
Fansler, D. N.	Logansport		1880
Fitch, Graham N.	Logansport	Withdrawn	1875
Gemmill, H. C.	Galveston		1874
Herman, John	Logansport		1874
Justice, J. M	Logansport	Suspended	1873
Powell, J. Z.	Logansport		1874
Price, C. A.	Logansport		1880
Sanders, C. L.	Logansport		1880
Stevens, B. C.	Logansport		1873
Strade, A. B.	Dow		1874

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CLARK COUNTY.

Officers.

W. H. Sheets.....President.
J. E. Oldham.....Vice-President.
R. E. Curran.....Secretary.
T. A. Graham.....Treasurer.

Censors.

N. Field. W. N. McCoy. F. A. Seymour.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Beckwith, L. W	Jeffersonville		1877
Curran, R. E	Charlestown		1877
Fouts, W. D	Jeffersonville		1877
Field, N	Jeffersonville		1877
Graham, T. A	Jeffersonville		1877
McBride, C. R	Jeffersonville		1877
McClure, D	Jeffersonville		1877
McClure, S. C	Jeffersonville		1879
McCoy, W. N	Jeffersonville		1877
Oldham, J. E	Charlestown		1877
Seymour, F. A	Jeffersonville		1877
Sheets, W. H	Jeffersonville		1877
Taggart, S. C	Charlestown		1878

CLINTON COUNTY.

Officers.

John A. Barnes.....President.
Wm. Strange.....Vice-President.
J. S. McMurray.....Secretary.
T. B. Cox.....Treasurer.

Censors.

O. Gard. E. W. Bogan. J. M. C. Adams.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Adams, J. M. C	Frankfort		1880
Barnes, J. A	Michigantown		1880
Bowers, V	Middle Fork		1880

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Brown, G. W	Frankfort		1880
Bogan, E. W	Kirklin		1880
Cook, M. D.	Hillisburg		1880
Cox, T. B	Frankfort		1880
Dunn, W. P	Frankfort		1880
Fall, W. D.	Kirklin		1880
Gentry, J M	Frankfort		1880
Gard, O	Middle Fork		1880
Holmes, W. A. T	Kirklin		1880
Holmes, J. H	Manson		1880
McMurray, J. S	Frankfort		1880
Myers, J. M.	Kirklin		1880
Morrison, O. A. J	Middle Fork		1880
Palmer, R. F	Frankfort		1880
Strange, Wm	Michigantown		1880
Schwin	Kirklin		1880
Smith, E. E	Circleville		1880
Thomas, G. L	Moran		1880
Youkey, W. P	Camden		1880

DAVIESS COUNTY.

Officers.

G. G. Barton ..... President.
Henry Gers ..... Secretary.
J. L. Moore ..... Treasurer.

Censors.

J. A. Scudder. J. L. Moore. F. A. Anderson.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Anderson, F. A	Washington		1873
Anderson, W. B.	Edwardsport	Suspended	1877
Barton, G. G	Washington		1873
Clark, J. W	Glendale		1873
Carter, D. R	Epsom		1873
Gers, Henry	Washington		1876
Jones, J. A	Washington	Withdrawn.	1873
Lemmon, W. W	Washington		1873
McDaniel, C. W	Washington		1876
Millman, J. H	Washington		1876
Moore, J. L	Washington		1876
Scudder, J. A	Washington		1873
Taylor, Harvey	Raglesville		1873
Welleford, G. W	Glendale		1876

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DEARBORN COUNTY.

Officers.

J. P. Green.....President.
W. C. Henry.....Vice-President.
E. P. Bond.....Secretary.
C. B. Miller.....Treasurer.

Censors.

J. D. Gatch. T. C. Smith. James Lamb.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bond, E. P	Lawrenceburg		1844
Bond, R. C	Aurora		1867
Bowers, A. J	Moore's Hill		1867
Craig, T. E	Manchester		1867
Crisler, R. H	Bulletsville, Ky	Suspended	1876
Davis, J. R	Harris		1877
Dunn, W. H	Wilmington	Suspended	1878
Diller, J. M	Cleves, O		1878
Elfers, J	Guyansville		1878
Freeman, William	Hartford		1875
Fermier, P	Wiesburg		1872
Freeland, J. P	Manchester	Suspended	1878
GATCH, J. D	Lawrenceburg		1872
Green, J. P	Lawrenceburg		1871
Hackleman, O. P	Bright	Suspended	1878
Haines, A. B	Aurora		1867
Haire, J. H	Elizabethtown, O		1879
HARDING, M. H	Lawrenceburg		1844
Harryman, S. E	Lawrenceburg		1870
Henry, W. C	Aurora		1872
Harryman, A. B	Aurora		1873
Hughes, J	Cleves, O	Died Feb. 23, 1880	1878
Hughes, R	St. Leon	Suspended	1878
Hughes, W. C	Cleves, O	Suspended	1878
Heaton, C	Moore's Hill		1878
Hutchinson, W. C	Unknown	Excluded	1878
Kyle, T. M	Manchester	Suspended	1869
Lamb, James	Aurora		1867
Miller, C. B	Lawrenceburg		1867
Rectanus, F	Aurora		1867

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Robbins, S. B.	Lawrenceburg		1867
Sale, F. H.	Dillsborough	Suspended	1867
Sale, J. H.	Dillsborough	Suspended	1867
Smith, T. C.	Aurora		1878
Swales, W. H., Sr.	Logan		1875
Swales, W. H., Jr.	Logan		1878
Spaulding, John	Guyansville		1878
SUTTON, GEORGE	Aurora		1844
Sutton, H. H.	Aurora		1879
Terrill, W. H., Jr.	Petersburg, Ky.		1867
Terrill, J. C.	Hebron, Ky.		1876
Trion, Fred	Aurora		1879
Vincent, H. C.	Gilford		1867
Vincent, E. B.	Sunman		1876
Walter, C. G.	Lawrenceburg		1867
Whitehead, W. E	Brownstown	Withdrawn	1879
Woodward, C. G.	Lawrenceburg		1879

DECATUR COUNTY.

Officers.

William Bracken ..... President.
J. L. Wooden ..... Vice-President.
W. H. Wooden ..... Secretary.
E. B. Swem ..... Treasurer.

Censors.

J. H. Bobbitt. Thomas Johnson. J. H. Alexander.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Alexander, John H.	Clifty		1877
Bobbitt, John H.	Greensburgh		1877
Bracken, William	Greensburgh		1877
Cain, C.	Clarksburg		1878
Crawford, George S.	Clifty		1877
Dowden, A. W	New Point		1878
Howard, F. M.	Saint Paul		1879
Johnson, Thomas	Clarksburg		1878
Reeves, U. G	Clifty		1877
Schofield, J. V.	Harris City		1879
Swem, E. B.	Greensburgh		1877
Webb, W. H.	Adams		1877
Wooden, J. L.	Greensburgh		1877
Wooden, W. H.	Greensburgh		1879

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DELAWARE COUNTY.

Officers.

T. J. Bowls.....President.
J. Dillon.....Vice-President.
G. D. Leech.....Secretary.
W. J. Boyden.....Treasurer.

Censors.

John Horn. A. B. Bradbury. R. Winton.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Armitage, D. R.	Muncie		1878
Anderson, O. F	Newcorner		1879
Black, N. W	Selma		1878
Bradbury, A. B.	Muncie		1879
Bowls, T. J.	Muncie		1878
Boyden, W. J.	Muncie		1878
Davis, F. M.	Wheeling	Moved	1878
Dillon, J	Daleville		1878
Green, George	Royerton		1879
Horn John	Yorktown		1878
Horn, W. N.	Yorktown		1879
Jump, S. V	New Burlington		1878
Kemper, G. W. H	Muncie		1878
Leech, G. D	Muncie		1878
Littler, J. M.	Muncie		1880
Muncey, D. O.	Newcorner		1879
Murray, A. L	Granville		1878
Reasoner, O. I.	Shidler Station	Suspended, 1880	1879
Skiff, Clark	Selma		1879
Winton, Robert	Muncie		1879

DUBOIS COUNTY.

Officers.

J. P. Buckner.....President.
E. J. Kempf.....Secretary.
T. Wertz.....Treasurer.

Censors.

C. W. Schwartz. W. R. McMahan. T. Wertz.

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Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED
Buckner, J. P.	Huntingburg		1878
Clute, Will	Jasper	Restored	1877
Demott, W. M	Haysville		1874
Glezen, A. E	Ireland		1874
Harrris, J	St. Anthony		1878
Hill, E. F	Portersville		1875
Kempf, M	Ferdinand	Deceased	1874
Kempf, E. J	Ferdinand		1874
Knapp, Charles	Ferdinand		1878
Kelso, Z. C.	Ireland		1876
McMahan, W. R	Huntingburg		1874
McMahan, A. C	Huntingburg		1880
Osborn, W. R	Duff	Suspended	1875
Parr, G. L	Ireland		1875
Rust, Fred	Holland		1874
Siebar, J. A	Ferdinand		1880
Stork, H. W	Holland		1878
Swartz, C. W	Huntingburg		1874
Welman, R. M	Jasper		1874
Wertz, T	Huntingburg		1874
Williams, G. P	Jasper		1874

ELKHART COUNTY.

Officers.

James Shaw Dodge.....President.
George G. Greiner.....Secretary.
R. Q. Haggarty.....Treasurer.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Dodge, James Shaw	Bristol		1878
Greiner, George G.	Vistula		1878
Haggarty, R. Q.	Elkhart		1878
Haggarty, R. J	Elkhart	Died Jan. 16, 1880	1878
Julien, J. K	Locke	Suspended for non-payment of dues	1878
Montgomery, H. T.	Wakarusa		1878
Putt, Franklin L.	Middlebury		1878

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FAYETTE COUNTY.

Officers.

George R. Chitwood.....President.
George R. Sigler.....Vice-President.
Joshua Chitwood.....Secretary.
James A. Smith.....Treasurer.

Censors.

Samuel W. Vance. Wm. J. Pepper. Vincent H. Gregg.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Chitwood, George R.	Connersville		1879
Chitwood, Joshua	Connersville		1879
Chitwood, John Eberle	Connersville		1879
Day, B. F.	Waterloo	Withdrawn	1879
Gregg, Vincent H.	Connersville		1879
Hamilton, S. N.	Shell City, Mo.		1879
Pepper, Wm. J.	Connersville		1879
Sigler, George A.	Brownsville		1879
Smith, James A.	Lyons		1879
Vance, Samuel W.	Connersville		1879
Wyman, Charles	Lyons		1880

FLOYD COUNTY.

Officers.

William A. Clapp.....President.
Charles Bowman.....Vice-President.
J. L. Stewart.....Treasurer.

Censors.

John Sloan. A. Neat. G. H. Cannon.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Alexander, Stephen J.	New Albany		1878
Bowman, Charles	New Albany		1878
Burney, William A.	New Albany		1880
Clapp, William A.	New Albany		1878
Cannon, George H.	New Albany		1878
Davis, Robert A.	New Albany		1878

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Easley, E. P.	New Albany		1878
Henry, John C	New Albany		1878
King, E. W	New Albany		1878
Nutt, Cyrus N.	New Albany		1878
Neat, A.	New Albany		1878
Sloan, John	New Albany		1878
Stewart, John L.	New Albany		1878
Schwartzel, James A	Vincennes	Removed	1879

FOUNTAIN COUNTY.

Officers.

W. C. Cole.....President.
C. D. Watson.....Secretary.
G. S. Jones.....Treasurer.

Censors.

C. V. Jones. Wesley Armstrong. Marshall Petitt.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Armstrong, Wesley	Hillsboro		1876
Birch, E. L.	Covington		1879
Colvert, William	Stone Bluff		1876
Cole, W. C	Attica		1876
Davidson, F. J.	Wallace		1880
Fine, E. M.	Steam Corner		1876
Green, T. C.	Hillsboro		1880
Hays, G. C.	Hillsboro		1876
Johnson, C. S.	Harveysburg		1876
Jones, C. V.	Covington		1876
Jones, G. S.	Covington		1876
Lyon, L. D.	Attica		1876
McNeil, S.	Steam Corner		1876
Mock, J. W.	Covington		1878
Petro, B. L.	Covington		1876
Petitt, Marshall	Veedersburg		1879
Quinn, J. W.	Hillsboro		1876
Riffle, J. S	Newton		1876
Richardson, A. G.	Stone Bluff		1876
Rupert, A. M.	Attica		1878
Spining, J. N.	Covington		1878
Simpson, T. J.	Fountain		1879
Watson, C. D.	Covington		1876

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FRANKLIN COUNTY.

Officers.

H. G. Averdick.....President.
Charles Schum.....Vice-President.
Lurton D. Dillman.....Secretary.
George B. Buckingham.....Treasurer.

Censors.

George Berry. J. H. Quick. R. J. Owens.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Averdick, H. G.	Oldenburg		1880
Berry, George	Brookville		1880
Berry, W. H.	Brookville		1880
Buckingham, George	Springfield		1880
Dillman, L. D.	Brookville		1880
Gifford, Thomas	Laurel		1880
Gifford, S. A	Laurel		1880
Jones, J. J.	Mixerville		1880
Owens, R. J	Cedar Grove		1880
Patteson, E. L.	Metamora		1880
Quick, J. H.	Brookville		1880

FULTON COUNTY.

Officers.

Vernon Gould.....President.
James A. Sutton.....Secretary.
J. C. Spohn.....Treasurer.

Censors.

A. H. Robbins. A. Brown. E. B. Bracy.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bracy, E. B.	Rochester		1879
Brown, A.	Rochester		1879
Caple, A. B.	Allen	Suspended	1879
Gould, Vernon	Rochester		1879
Hill, William	Rochester		1879
Horrell, J. Q	Kewana	Suspended	1879

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Robbins, A. H	Rochester		1879
Spohn, J. C	Rochester		1879
Surguy, A. B	Rochester		1880
Sutton, J. A	Rochester		1879
Waite, O. P	Fulton		1879
Ward, A. A	Rochester	Removed	1879

GIBSON COUNTY.

Officers.

Wm. G. Kidd.....President.
W. G. Hopkins.....Vice-President.
Frank H. Maxon.....Secretary.
Wm. W. Blair.....Treasurer.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Blair, Wm. W	Princeton		1874
French, Wm. W	Fort Branch		1880
Gudgel, John F	Hazleton		1877
Howard, E. J	Hazleton		1874
Hopkins, W. G	Fort Branch		1879
Kidd, Wm. G	Princeton		1874
Munford, Samuel E	Princeton		1874
Maxam, Frank H	Princeton		1877
Malone, John A	Princeton		1874
Mason, George C	Oakland City		1880
Moore, Robert	Summerville		1874
Patten, Joseph C	Francisco		1874
Shoptaugh, Shelton H	Princeton		1874
Sears, G. M	Patoka		1880
West, V. T	Princeton		1874
Woodruff, A. C	Owensville		1876

GRANT COUNTY.

Officers.

H. D. Reasoner.....President.
S. C. Weddington.....Secretary.
Lavanner Corey.....Treasurer.

Censors.

T. C. Kimball. J. F. McKinstry. A. J. Bates.

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Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bates, Aaron J.	Upland	Grant county	1871
Barnes, W. C.	Mier	Grant county	1875
Charles, Henry	Carthage	Rush county	1865
Conser, N. D.	Hartford	Blackford county	1852
Conner, J. C	Jalapa	Grant county	1872
Corey, Lavanner.	Van Buren P. O.	Grant county	1862
Corey, Lewis J	Van Buren P. O	Grant county	1875
Daniels, Geo. W.	Sweetser	Grant county	1877
Egbert, George	Sweetser	Grant county	1857
Flynn, William	Marion	Grant county	1876
Good, Jonas	Warren	Huntington county	1860
Hamilton, A. A	Marion	Grant county	1872
Henley, Alpheus	Fairmount	Grant county	1866
Hess, L. P.	Marion	Grant county	1866
Hall, John W.	Sweetser	Grant county	1876
Home, Samuel S	Jonesboro	Grant county	1869
Hupp, Samuel	Warren	Huntington county	1877
Ijams, T. F	North Grove	Miami county	1877
Jackson, L. M	Hartford	Blackford county	1868
Kimball, A. D.	Xenia	Miami county	1857
Kimball, T. C.	Xenia	Miami county	1868
Lomax, Constantine	Marion, Grant county	Charter member	1848
LOMAX WILLIAM	Marion, Grant county	Charter member	1848
Lyons, W. B.	Huntington	Huntington county	1856
Lacy, J. D.	Jadden P. O.	Grant county	1877
Lenox, Frank	Pt. Isabel P. O	Grant county	1879
Littler, John M	Merrill, Delaware Co.	Withdrawn	1875
McKinstry, John F	Marion	Grant county	1875
Manring, N. H	Rizdon P. O.	Grant county	1876
Meek, John A	Jonesboro	Grant county	1850
Mendenhall, O. A	Xenia	Miami county	1877
Moore, Charles V	Fairmount	Grant county	1878
McKinney, Geo. W	Jonesboro	Grant county	1879
Perry, John W.	Alexandria	Madison county	1870
Palmer, Daniel	Warren.	Huntington county	1853
Pugh, Mahlon	Upland	Grant county	1876
Pugh, T. Jeff	Grant county	Don't know his P. O.	1874
Reasoner, H. D.	New Cumberland	Grant county	1866
Riggs, C. E.	Rizdon P. O.	Grant county	1866
Scrambling, Wm. H.	Sweetser	Grant county	1872
Shiveley, James S	Marion, Grant county	Charter member	1848
Shiveley, M. T	Marion	Grant county	1874
Smith, R. W.	Xenia, Miami county	Should have been reported last year	1875
Sproul, John S.	Warren	Huntington county	1872

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Seal, Isaac N	Hackleman P. O	Grant county	1878
Weddington, S. C	Jonesboro	Grant county	1871
Williams, Lewis	Marion	Grant county	1857

GREENE COUNTY.

Officers.

M. Beaty ..... President.
H. R. Lowder ..... Secretary.
P. L. Brouillette ..... Treasurer.

Censors.

H. R. Lowder. P. L. Brouillette. S. C. Cravens.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Beaty, M	Bloomfield		1878
Brouillette, P. L	Worthington		1878
Burk, W. H., Jr	Scotland		1879
Cravens, S. C	Bloomfield		1878
Gastineau, H	Worthington	Withdrawn	1879
Conley, J. N	Bloomfield	Moved away	1878
Gray, J. W	Bloomfield		1878
Hanna, J. W	Linton		1879
Hilburn, E. W	Newberry		1878
Haig, John W	Scotland		1880
Kutch, John	Bloomfield		1879
Laughead, G. G	Scotland		1879
Lowder, H. R	Bloomfield		1878
Littlejohn, D. N	Newberry	Moved away	1879
Novell, H. V	Bloomfield		1878
Rose, B. A	Linton		1879
Spinner, W. B	Switz City	Withdrawn	1878
Williams N. W	Owensberg	Withdrawn	1878
Sims, ———	Newberry		1879

HAMILTON COUNTY.

Officers.

A. R. Tucker ..... President.
W. B. Graham ..... Vice President.
E. C. Loehr ..... Secretary.
A. D. Booth ..... Treasurer.

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Censors.

J. M. Gray. P. P. Whitsell. S. C. Dove.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Benson, J. L	Westfield		1873
Booth, A. D.	Noblesville		1874
Clark, H. W	Noblesville		1873
Cyrus, W. H	Noblesville		1873
Davenport, H. E	Sheridan		1873
Dove, S. C	Westfield	Restored (?)	1880
Gray, J. M	Noblesville		1873
Graham, W. B	Noblesville		1873
Haworth, M. C	Noblesville		1877
Heath, J. P	Fisher's Switch		1878
Heartley, K. C	Maliville	Suspended.	1878
Loehr, E. C	Noblesville		1873
Moore, Henry	Sheridan		1873
Messie, Adam	Noblesville		1880
McShane, J. T	Carmel		1873
Newby, J. C.	Boxley		1880
Parr, J. N.	Jolliet		1873
Rooker, J. I		Removed from co	1873
Stout, H. H	Cicero		1873
Tucker, A. R	Cicero		1873
Whitsell, P. P.	Clarksville		1873
Warford, F. M.	Cicero		1873

HANCOCK COUNTY.

Officers.

J. O. Espy.....President.
J. B. Sparks.....Vice President.
E. I. Judkins.....Sec. and Treas.
N. P. Howard, Jr.....Asst. Secretary.

Censors.

S. M. Martin. W. A. Justice. S. A. Troy.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Espy, Joseph O	Palestine		1877
Howard, N. P., Sr	Greenfield		1874
Howard, N. P., Jr	Greenfield		1879

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Judkins, E. I.	Greenfield		1877
Jones, J. M	Fortville		1877
Justice, W. A	Eden		1879
King, W. R	Philadelphia		1877
Martin, S. M	Greenfield		1874
Stewart, J. G	Fortville		1874
Sparks, J. B	Charlottsville	Restored Jan. 6, '80.	1880
Selman, J. W	Greenfield		1880
Pierson, E. W	Gem P. O		1880
Troy, S. A	Milliners' Corner		1874
Tague, George	Greenfield		1875
Yancey, S. T	Fortville		1874

HENDRICKS COUNTY.

Officers.

M. G. Parker.....President.
B. Bartholomew.....Vice-President.
W. T. Lawson.....Secretary.
W. J. Hoadley.....Treasurer.

Censors.

F. C. Ferguson. J. H. Orear. J. S. Ragan.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bartholomew, B.	Danville		1876
Brill, J. H.	Pittsboro		1876
Barker, Joel	Brownsburg		1876
Davidson, A.	Brownsburg		1880
Dryden, T. J	Clayton		1876
Ellis, Thomas E.	Plainfield		1878
Farabee, C. E.	Danville		1880
Ferguson, F. C.	Brownsburg		1876
Green, J. N.	Stilesville		1876
Heavenridge, A.	Stilesville		1876
Hoadley, W. J.	Danville		1876
House, G. F. H.	Pecksburg.	Suspended for non-payment of dues	1880
Kennedy, L. H	Danville		1876
Lawson, W. T.	Danville		1879
Mansbridge, J. W.	Hadley		1879
Moone, R. C	Bellville		1876
Osborn, J. A	Danville		1876

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Orear, J. H.	Lizton		1876
Parker, M. G	Amo		1877
Ragan, John S	Avon		1879
Smith, F. W	Plainfield	Suspended for non-payment of dues	1876
Summers, H. C	Amo		1877
Talbot, R. C	Pittsboro	Removed	1876

HENRY COUNTY.

Officers.

H. Benedict.....President.
S. Ferris.....Vice-President.
John Rea.....Secretary and Treasurer.

Censors.

George N. Rea. W. A. Boor. G. D. Bailey.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bailey, G. D	Spiceland		1879
Bartlett, C. G	Dunreith		1879
Benedict, H	Springport		1879
Boor, W. F	New Castle		1879
Boor, W. A	New Castle		1879
Burke, G. W	New Castle		1879
Cochrane, James	Spiceland		1879
Ferris, S	New Castle		1879
Gronendyke, T. W	New Castle		1879
Hess, L. W	Cadiz		1879
HOBBS, WILSON	Knightstown		1879
Mendenhall, Q	New Castle		1879
Mendenhall, E. T	Milleville		1879
Resener, William M	Sulphur Springs		1879
Rea, George N	New Castle		1879
Rea, John	New Castle		1879
Zimmerman, G. W	Cadiz		1879

HOWARD COUNTY.

Officers.

Lewis Kern.....President.
I. F. Smith.....Vice-President.
J. McLean Moulder.....Secretary and Treas.

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Censors.

L. C. Miller, D. J. Shirley, James Scott.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Armstrong, E. A.	Kokomo		1864
Cole, H. C	Kokomo		1864
Conner, Levi	Jerome		1880
Covalt, A. A	Greentown		1869
Dayhuff, A. F.	Kokomo		1854
Hoss, J. V.	Kokomo		1866
Johnson, I. C.	Kokomo		1864
Jackson, B. F.	Alto		1880
Kern, Lewis	Kokomo		1864
Kern, Theo	Kokomo		1879
Kirkpatrick, J. B	Center P. O.		1880
Moulder, J. McLean	Kokomo		1875
Mavity, W. K	Kokomo		1866
Miller, L. C.	Alto		1867
Martin, I. W.	Ervin P. O.		1865
Martin, John H	Ervin P. O.		1880
McTurnan, J. M.	Rigdon	Moved to Indiana'lis.	1873
Ross, John H	Kokomo		1874
Scott, William	Kokomo		1864
Scott, James	Greentown		1864
Scott, G. B	Greentown		1869
Shirley, D. J.	New London		1864
Smith, I. F	Jerome		1878
Wilson, R. Q	Kokomo		1866
Ware, C. M.	West Liberty		1869

JACKSON COUNTY.

Officers.

Samuel Coryell.....President.
W. E. Whitehead.....1st Vice-President.
S. H. Charlton.....2d Vice-President.
Thomas F. Milligan.....Secretary.
Joseph A. Stilwell.....Treasurer.

Censors.

George O. Barnes. George Q. Orvis. George W. May.

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Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bain, Wm. C. A	Brownstown		1876
Barnes, George O	Courtland		1877
Boas, M. L	Medora		1877
Charlton, Samuel H	Seymour		1876
Coryell, Samuel	Crothersville		1879
Cumming, D. J	Houston		1876
Davis, Joseph	Reddington	Suspended	1877
Galbraith, Thomas S	Seymour		1876
Gerrish, James W. F	Seymour	Suspended	1876
May, George W	Mooney	Suspended	1876
Milligan, Thomas F	Brownstown		1877
Orvis, Gecrge Q	Seymour		1877
Reed, E. P	Ewing		1876
Rodman, Wm. M	Waymansville	Bartholomew county.	1879
Stage, Lewis I	Vallonia	Deceased	1876
Stilwell, Joseph A	Brownstown		1876
Shields, John T	Seymour	Suspended	1877
Tinch, E. T	Frectown		1876
Warner, Wm. H	Crothersville	Expelled	1876
Wells, James C	Mooney	Suspended	1876
Wilson, Marshall V	Medora		1876
Whitehead, W. E	Vallonia		1879

JEFFERSON COUNTY.

Officers.

James R. Lewis.....President.
William Marquis.....Vice President.
J. H. Matthew.....Sec. and Treas.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Collins, Wm. A	Madison		1874
Cornett, W. T. S	Madison		1874
Ely, James R	Madison		1874
Hutchings, W. D	Madison		1874
Lewis, James R	Madison		1874
Marquis, Wm	Wirt		1874
Matthew, J. H	Madison		1874
Richardson, W. H	Vernon		1874
Sanderson, Thomas	Kent	Withdrawn	1874
Tevis, R. M	Brooksburg	Withdrawn	1874
Wright, C. H	North Madison		1874

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JOHNSON COUNTY.

Officers.

J. H. Carter.....President.
J. C. Wood.....Vice President.
T. C. Donnell.....Secretary.
B. Wallace.....Treasurer.

Censors.

P. W. Payne. J. T. Jones. A. Miller.

Members.

Carne, Zachariah	Greenwood		1880
Carter, J. H.	Needham Station		1880
Donnell, Theophilus C.	Franklin		1880
Ferris, J. S.	Bargarsville		1880
Hall, Homer J.	Franklin		1880
Jones, James T	Franklin		1880
Marshall, J. A.	Nineveh P. O.		1880
Miller, A.	Whiteland		1880
Payne, Philander W.	Franklin		1880
Wallace, Barnett	Franklin		1880
Sadler, J. J.	Edinburg		1880
Webb, W. A	Franklin		1880
Wood, John C	Franklin		1880

KNOX COUNTY.

Officers.

H. M. Smith.....President.
F. W. Beard.....Secretary.
A. Patton.....Treasurer.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
BEARD. F. W.	Vincennes		
Bauer, M.	Vincennes		
Beven, J. C.	Vincennes		
Davis, Royce	Decker's		
Fairhurst, O.	Vincennes		
Harris, F. M	Vincennes		
Harris, W. B.	Vincennes		
Harrison, S. L	Vincennes		

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Haughton, A. J	Oaktown		
Keith, B. F.	Edwardsport		
Mantle, John H	Vincennes		
Patton, A	Vincennes		
Pugh, J. W	Oaktown		
Reed, F.	Bicknell		
Smith, H. M	Vincennes		
Wise, W. K	Oaktown		

KOSCIUSKO COUNTY.

Officers.

Irvin J. Becknell ..... President.
John H. Davisson ..... Vice-President.
Irvin B. Webber ..... Secretary.
Samuel C. Gray ..... Treasurer.

Censors.

E. P. Gilpin. J. M. Bash. B. Burket.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bash, Joseph M	Warsaw		1878
Becknell, Irvin J	Milford		1878
Bolen, M. J	Butler	Removed	1876
Burket, Calvin W	Warsaw		1875
Burket, Benjamin	Leesburg		1879
Cammack, Thomas	Milford		1876
Collar, A. R.	Syracuse		1880
Davenport, Theodore	Warsaw		1851
Davisson, John H	Warsaw		1876
Gilpin E. P.	Milford		1879
Gray, Samuel C	Warsaw		1850
Makemson, E. H	Pierceton		1875
Pearman, F. M	Palestine		1878
Peck, Charles F	Leesburg		1876
Seymour, William P	Warsaw		1876
Ward, U. J	Silver Lake		1875
Webber, Irvin B	Warsaw		1875
White, Frank H	Warsaw		1878

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LAGRANGE COUNTY.

Officers.

A. M. Spaulding.....President.
E. G. White and John Dancer.....Vice Presidents.
John L. Short.....Secretary.
E. G. White.....Treasurer.

Censors.

William H. Short. A. W. Jones. H. M. Casebeer.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Casebeer, H. M	Lagrange		1878
Dayton, George H	Lima		1877
Dancer, John	South Milford		1877
Goodrich, C. D	Lima		1880
Hughes, William	Lima		1877
Jones, A. W	Mongo		1878
Niman, J. P	Lagrange		1877
Rawles, J. W	Mongo		1877
Robinson, S. R	Lagrange		1879
Spaulding, A. M	Brushy Prairie		1877
Short, W. H	Lagrange		1877
Short, John L	Lagrange		1877
Whetzel, C. M	Mongo		1878
White, E. G	Lagrange		1877

LAPORTE COUNTY.

Officers.

L. S. Keen.....President.
J. H. Wm. Meyer.....Secretary.
C. R. Warren.....Treasurer.

Censors.

Landon C. Rose. George L. Andrew. L. S. Keen.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Andrew, George L	Laporte		1875
Darling, M. L	Laporte		1875
Fravel, Theophilus	Westville		1875

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Keen, L. S.	Laporte		1875
Meyer, J. H. Wm	Laporte		1877
Miller, H. F. C.	Otis	Moved to Lake county	1877
Martin, J. S.	Rolling Prairie		1880
Rogers, E. A.	Laporte		1875
Rose, L. C.	Laporte		1875
Standiford, W. F.	Westville		1879
Stevenson, A. G.	Laporte		1875
Warren, C. R.	Otis		1878

LAWRENCE COUNTY.

Officers.

J. L. W. Yost ..... President.
A. F. Berry ..... Vice-President.
J. Gardner ..... Secretary.
S. A. Rariden ..... Treasurer.

Censors.

B. Newland. E. P. Gibson. E. S. McIntire.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Allen, E	Fayetteville	The dates are here,	1877
Berry, A. F.	Rivervale	only reaching back	1875
Burton, G. W.	Mitchell	to the time when	1875
Burton, J.	Georgia	the society was re-	1875
Crim, L. A.	Tunnelton	organized in con-	1876
Dixon, H. C.	Tunnelton	formity to the regu-	1876
Ellison, W. H.	Heltonsville	lations of the State	1879
Gardner, J.	Bedford	Society. About	1875
Gibson, E. P.	Mitchell	half of the mem-	1875
Judah, W.	Guthrie	bers were members	1877
Kimberlin, L. A.	Mitchell	of the old society,	1876
LaForce, H. C.	Bedford	dating back to	1876
Larkin, J. B.	Mitchell	1866, and of a yet	1875
McIntire, E. S.	Mitchell	older society of	1875
NEWLAND, BEN.	Bedford	1853. Perhaps it	1875
Pearson, J. C	Mitchell	would be best not	1875
Phipps, J. M.	Heltonsville	to give dates in the	1876
Rariden, S. A.	Bedford	present volume of	1875
Smith, W. H.	Leesville	Transactions	1875
Stillson, J.	Bedford		1875
Yandell, W.	Huron		1875
Yost, J. L. W.	Mitchell		1875

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MADISON COUNTY.

Officers.

N. T. Wickersham.....President.
O. W. Brownback.....Vice-President.
H. E. Jones.....Secretary.
William Suman.....Treasurer.

Censors.

B. F. Spann. S. F. Brunt. J. Stewart.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Boston, J. G	Pendleton	Withdrawn	1878
Broadbent, Oliver	Anderson		1875
Brown, Martin	Frankton		1880
Brownback, O. W	Pendleton		1876
Brunt, S. F	Summitville		1875
Burr, C. S	Anderson		1875
Curtis, D. M	Anderson		1880
Chittenden, George F	Anderson		1875
Cook, John W	Pendleton		1877
Cook, Ward	Pendleton		1875
Dunham, V	Anderson		1878
Edwins, S. W	Frankton		1875
Free, C	Funk's Station		1875
French, W. J	Frankton		1879
Fussell, Lundy	Markleville		1877
Harter, J. H	Anderson.		1879
Harter, W. P	Anderson.		1879
Hunt, W. A	Anderson		1875
Hunt, J. W	Alexandria		1879
Inlow, James E	Alexandria		1880
Jones, H. E	Anderson		1875
Lewis, Walter H	Huntsville		1875
McMahan, W. V	Columbus	Dead	1875
Morgan, William J	Purdue		1875
Perry, John W	Alexandria	Withdrawn	1875
Saunders, T. K	Anderson		1880
Spann, B. F	Anderson		1876
Stephenson, Joseph	Pendleton		1880
Stewart, J	Anderson		1875
Sullivan, John L	Alexandria		1875
Suman, William	Anderson		1875
Vanmeter, J. N	Florida Station		1879
Wickersham, N. T	Anderson		1875

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MARION COUNTY.

Officers.

L. L. Todd.....President.
I. C. Walker.....Vice-President.
E. S. Elder.....Secretary.
James H. Taylor.....Assistant Secretary.
C. H. Ritter.....Treasurer.

Judicial Council.

J. K. Bigelow. T. N. Bryan. J. M. Kitchen. W. E. Jeffries.
P. H. Jameson. G. V. Woolen.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Allen, Wesley	West Newton		1878
Bailey, W. P.	Southport	Suspended	1876
Banker, H. J.	Columbus		1879
Barnes, C. A.	Brightwood		1878
BIGELOW, J. K.	Indianapolis		1876
Boynton, C. S.	Hope, Barth'mew Co.	Suspended.	1878
Bryan, T. N.	Indianapolis.		1875
Bullard, Wm. M.	Indianapolis.	Suspended.	1876
Carson, L. O.	Traders' Point		1879
Chambers, John	Indianapolis.		1875
Cochran, W. A.	North Indianapolis		1875
Comingor, J. A.	Indianapolis.		1875
Crist, D. O.	Indianapolis.		1879
Davis, Samuel	Indianapolis.		1877
Davis, W. H	Denver, Col.	Suspended.	1875
Eastman, Joseph	Indianapolis		1875
Elder, E. S.	Indianapolis		1876
Elstun, Wm. J	Indianapolis		1875
Featherston, J. R.	Indianapolis		1875
Fields, M. H.	Indianapolis		1875
Fletcher, W. B.	Indianapolis		1875
Gale, E. S.	Indianapolis		1880
Hadley, E	Indianapolis.		1875
HARVEY, T. B.	Indianapolis.		1875
HAUGHTON, R. E.	Indianapolis.		1876
Haverfield, M. E. W.	Indianapolis.	Suspended	1879
Haymond, W. S	Indianapolis.		1880
Henthorn, Leroy	Indianapolis.		1878
Hervey, J. W.	Indianapolis.		1875
Hodges, E. F.	Indianapolis.		1880

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Hornaday, W. H.	Malott Park	Removed	1875
Hubbard, Wm.	Indianapolis		1879
Hussey, J. R.	Indianapolis	Suspended	1879
Jameson, P. H.	Indianapolis		1875
Jameson, H.	Indianapolis		1875
Jeffries, W. E.	Indianapolis		1875
Kitchen, John M.	Indianapolis		1878
Lyons, I. A. E.	Indianapolis		1879
Mapes, Smith H.	Lawrence		1875
Marsee, J. W.	Indianapolis		1878
Maxwell, Allison	Indianapolis		1878
Murdock, T. S.	Indianapolis		1879
Newcomer, F. S	Indianapolis		1875
Oliver, D. H.	Indianapolis		1875
PARVIN, THEOPHILUS	Indianapolis		1876
Patterson, A. W.	Indianapolis		1878
Ritter, C. A.	Indianapolis		1878
Rodgers, J. G	Indianapolis		1880
Rooker, J. I	Castleton		1880
Stevens, Thad. M.	Indianapolis		1875
Stratford, I. N.	Indianapolis	Suspended	1878
Sutcliffe, J. A.	Indianapolis		1878
Taylor, James H.	Indianapolis		1880
Thompson, J. L.	Indianapolis		1876
Thompson, W. C	Indianapolis	Suspended	1876
Thomas, A. J	Indianapolis		1880
TODD, R. N.	Indianapolis		1875
Todd, L. L.	Indianapolis		1875
Van Vorhis, F. J.	Indianapolis		1875
Walker, I. C.	Indianapolis		1875
Wands, Wm	Indianapolis		1875
Waterman, L. D.	Indianapolis		1875
Waters, John C.	Indianapolis		1879
Wishard, W. H.	Indianapolis		1875
Wishard, W. N.	Indianapolis		1879
WOODBURN, JAMES H.	Indianapolis		1875
Woolen, G. V.	Indianapolis		1875
Wright, C. E.	Indianapolis		1878

MARSHALL COUNTY.

Officers.

S. W. Gould.....President.
J. H. Wilson.....Secretary and Treasurer.

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Censors.

G. R. Reynolds. William N. Bailey. A. H. Johnson.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bailey, William N	Plymouth		1879
Doke, J. T.	Walnut		1878
Eaton, R. B.	Argos		1878
Gould, S. W.	Argos		1878
Hamilton, J. J.	Plymouth		1880
Johnson, A. H.	Argos		1879
Leland, J. S.	Argos		1878
Loring, C. J	Argos		1878
Moody, J. W.	Bremen		1880
Rea, O. A	Marmont		1880
Reynolds, S. R.	Plymouth		1878
Stevens, O. P.	Maxinkuckee		1878
Wilson, J. H	Plymouth		1878
Wiseman, B. W. S	Marmont		1880
Younkman, A. B	Bremen		1880

MIAMI COUNTY.

Officers.

B. R. Graham.....President.
J. O. Ward.....Secretary.
Rollin Pence.....Treasurer.

Censors.

C. B. Higgins. W. H. Brenton. O. C. Irvin.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Bloomfield, E. M.	Peru		.....
Brenton, W. H	Peru		.....
Frierwood, E. K.	Amboy		.....
Graham, B. R.	Chili		.....
HELM, JOHN H	Peru		.....
Higgins, C. B	Peru		.....
Irvin, O. C	Bunker Hill		.....
Meek, James A	Bunker Hill		.....
Pence, Rollin	Santa Fe		.....
Ward, J. O	Peru		.....
Wilson, W. T.	Bunker Hill		.....

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MONROE COUNTY.

Officers.

Jos. G. McPheeters.....President.
C. D. McLahlan.....Vice President.
James D. Maxwell .....Secretary.
A. J. Axtell .....Treasurer.

Censors.

Geo. W. Bryan. B. C. Harris. L. T. Lowder.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Axtell, A. J.	Bloomington		1876
Bryan, George W	Bloomington		1876
Dodd, J.	Clear Creek		1876
Dodds, James F	Bloomington		1876
Durand, J. J	Bloomington		1876
Gaston, J. H	Stanford		1876
Harris, B. C	Ellettsville		1876
Lowder, L. T	Harrodsburg		1876
Maxwell, James D.	Bloomington		1876
McPheeters, Jos. G.	Bloomington		1876
McLahlan, C. D.	Harrodsburg		1876
Simpson, John D.	Harrodsburg		1880
Tourner, Henry P.	Bloomington		1876
Whitted, T. A.	Ellettsville		1876

MONTGOMERY COUNTY.

Officers.

A. T. Steele.....President.
E. W. Keegan.....Vice-President.
W. H. Ristine.....Secretary.
S. W. Purviance.....Treasurer.

Censors.

W. L. May. S. W. Purviance. A. P. Fitch.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Ball, Zopher	Waveland		1879
Brown, T. F.	Yountsville		1880

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Cowan, E. H.	Crawfordsville.		1875
Donaldson, J. W	Ladoga.		1877
Ensminger, S. L.	Crawfordsville		1875
Fitch, A. P	Waynetown	Withdrawn	1877
French, J. S.	Crawfordsville		1879
Griffith, T. J.	Darlington		1872
Hogsett, J. W	Mace		1873
Hurt, W. J.	Waynetown		1877
Hutchings, B. F.	New Market		1876
Johnson, W. L.	Crawfordsville		1872
Jones, O. H.	Mace		1876
Keegan, E. W.	Crawfordsville		1879
Leech, T. F.	Crawfordsville		1879
May, W. L	Crawfordsville		1872
McMurray, J. S.	Linden	Removed	1874
Purviance, S. W.	Crawfordsville		1872
Ramsdell, F. R.	Linden		1878
Ristine, W. H.	Crawfordsville		1878
Steele, A. T.	Waveland		1879
Straughn, J. W.	Parkersburg		1879
Straughn, K. K	Parkersburg		1879
Van Kugs, J. D	Waveland		1879
Washburn, E. P.	Linden	Withdrawn	1877

MORGAN COUNTY.

Officers.

C. M. Lindley.....President.
A. W. Reagan.....Vice-President.
H. C. Robinson.....Secretary.
E. P. Ritchey.....Treasurer.

Censors.

A. W. Reagan. P. McNab. J. E. Clark.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Clark, James E.	Martinsville		1879
Farr, Uriah H.	Paragon		1877
Green, Elijah V.	Martinsville	Suspended	1876
Cure, H. W.	Martinsville		1880
Holman, Charles C.	Martinsville		1879
Knight, James H.	Paragon	Restored	1876
Lindley, C. M	Brooklyn		1876

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
McNab, Philip	Mooresville		1876
Perce, Benjamin H	Mooresville		1876
Reagan, Amos W	Mooresville		1876
Ritchey, E. P.	Martinsville		1876
Robinson, H. C.	Martinsville		1876
Rundell, Sam N	Cope		1877
Snoddy, John M	Mooresville	Restored	1879
Seaton, Charles	Hall		1880
Tilford, Salem A	Martinsville		1879
Willan, R. D.	Trafalgar		1878

ORANGE COUNTY.

Officers.

Charles E. Laughlin ..... President.
Labin Lindley ..... Vice-President.
Ulrich H. Hon ..... Secretary.
Benton J. Hon ..... Treasurer.

Censors.

E. D. Laughlin. Theo. P. Carter. John A. Ritter.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Carter, Theo. P	Orangeville		1876
Hon, Benton J	Orleans		1875
Hon, Ulrich H	Paoli		1875
Lindley, Labin	Paoli		1875
Laughlin, E. D.	Orleans		1875
Laughlin, Charles E.	Orleans		1878
Lingle, Richard W	Orleans		1876
Ritter, John A.	Orangeville		1875

OWEN COUNTY.

Officers.

Smith, J. W ..... President.
Goss, J. M ..... Vice President.
Cox, Nathaniel D ..... Secretary.
Belles, J. T ..... Treasurer.

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Censors.

Wiles, W. V. Schell, W. Maddox, W. B. S.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Belles, J. T	Spencer		1879
Bridges	Jordan Village		1879
Cox, N. D.	Spencer		1880
Calvin, J. W.	Troy, Ohio	Removed	1880
Goss, J. M.	Freedom		1880
Jones, J. M	Cataract		1880
Mullinix, M. J.	Spencer		1879
Mullinix, E. N.	Spencer		1879
Maddox, W. B. S.	Vandalia		1879
Pierson, Allen	Stinesville		1879
Smith, J. W.	Gosport		1879
Stuckey. J. M.	Gosport		1879
Schell, F. A.	Spencer		1879
Schell, Walker	Spencer		1879
Sluss, J. G.	Cory	Removed	1879
Vansant, W. P.	Spencer		1880
Wiles, W. V.	Spencer		1879

PARKE COUNTY.

Officers.

Ira H. Gillum.....President.
R. H. W. McKey.....Vice-President.
William H. Gillum.....Secretary.
A. D. Tomlinson.....Treasurer.

Censors.

The Society.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Cross, J. F.	Rockville		1874
Dare, J. S.	Bloomingdale		1874
De Verter, G. D.	Howard		1876
Darrock, W. P.	Hollandsburg		1878
Gillum, Ira H.,	Sylvania		1874
Gillum, W. H.	Rockville		1874
Goldsberry, J. A.	Annapolis		1874
Goss, Marion	Bellmore		1874

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Hudson, B. F.	Montezuma		1874
Harvey, J. W.	Mansfield		1878
Hall, Omar D.	Annapolis		1879
Mater, J. D.	Bridgeton	Expelled Dec. 1, 1879, for advertising secret nostrums in his name	1874
McKey, R. H. W.	Russell's Mills		1875
Morris, C. C.	Rockville		1877
Mull, W. D.	Rockville		1879
Partlow, J. W.	Bellmore		1879
Rice, H. J.	Rockville		1878
Roberds, S. L.	Jessup Station		1879
Saunders, J.	Judson		1879
Tomlinson, A. D.	Bloomingdale		1874
Walden, C. C.	Marshall		1878
White, S. S.	Judson		1879
Williamson, W. N.	Russell's Mills		1878

PIKE COUNTY.

Officers.

G. B. Montgomery.....President.
W. P. Hornbrook.....Vice-President.
A. G. Hobbs.....Secretary.
A. R. Byers.....Treasurer.

Censors.

A. Leslie. J. B. Duncan. D. H. Daniels.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Adams, J. R.	Petersburg		1876
Agee, C. J	Petersburg	Withdrawn	1876
Byers, A. R	Petersburg		1876
Bartmas, Samuel T	Union		1876
Daniels, D. H	Otwell		1876
De Tan, David	Stendal		1878
Duncan, J. B	Petersburg		1879
Hobbs, Arthur G	Winslow		1878
Hornbrook, W. P.	Union		1879
Hoover, P. N.	Stendal		1879
Harris, R. W.	Algiers		1880
Hedden, Wm. C.	Otwell	Removed	1875

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Hornbrook, John T.	Union		1880
Leslie, A., Sr.	Petersburg		1876
Montgomery, G. B.	Winslow		1876
Phillips, R. W.	Union		1876
Phillips, D. F.	Algiers		1878
Simpson, John D.		Withdrawn	
Smith, J. F.	Petersburg		1877
Schenck, H. F.	Oatsville		1876
Woodward, L. E.	Union		1876

POSEY COUNTY.

Officers.

C. Elliott.....President.
W. M. Holton.....Vice-President.
S. H. Pearse.....Secretary.
E. V. Spencer.....Treasurer.

Censors.

M. S. Blunt. L. B. Bitz. S. O. Rawlings.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED
Bitz, L. B.	Blairsville		1877
Blunt, M. S.	Mt. Vernon		1877
Bucklin, G. W.	New Harmony		1879
Culmer, George F.	New Harmony		1878
Elliott, Cyrenus	Wadesville		1878
Holton, W. M.	New Harmony		1877
Hicks, C.	Caborns		1877
Kelly, F. H.	Stewartsville		1879
Krawsgrille, D.	Wadesville		1879
Murphy, Edward	New Harmony		1877
Moore, R. S.	Mt. Vernon		1877
Montgomery, D.	Cynthiana		1878
Neal, Daniel	New Harmony		1878
Pearse, S. H.	Mt. Vernon		1877
Rawlings, S. O	New Harmony		1878
Rutledge, J. C.	Poseyville		1878
Spencer, E. V.	Mt. Vernon		1877
Schultz, O. T.	Mt. Vernon		1877
Spain, A. W.	Poseyville		1877
Thornburgh, J. E	Farmersville		1879

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Williams, Floyd	Farmersville		1877
Weever, J. B	Mt. Vernon		1877
Williams, J. B	Mt. Vernon		1877
Welborn, G. W	Stewartsville		1877

PULASKI COUNTY.

Officers.

D. J. Loring.....President.
A. R. Thompson.....Vice President.
W. H. Thompson.....Secretary.
H. E. Pattison.....Treasurer.

Censors.

G. W. Thompson. D. N. Foutz. H. Kittinger. F. B. Thomas. Wm. Kelsey.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barnes, M. C	Knox		1880
Cleland, Wm. C	Kewanna	Suspended	1876
Fitch, G. N	Logansport		1880
Foutz, N. David	Royal Center		1877
Gordon, M. M	Francesville		1880
Kelsey, Wm.	Monterey		1876
Kelsey, Wm. E	Monterey	Student	1880
Kittinger, Henry	Winamac		1876
Loring, D. J	Francesville		1876
McPherson, C. F	Pulaski	Suspended	1878
Moore, Dennis F	Winamac		1880
Mullin, J. H	Winamac	Removed to Iowa	1876
Pattison, H. E	Winamac		1876
Rogers, Leroy	Marmont		1878
Thomas, James	Royal Center	Suspended	1877
Thomas, J. J	Winamac	Student	1880
Thompson, A. R	Kewanna		1876
Thomas, Felix B.	Winamac		1876
Thompson, G. W	Kewanna		1880
Thompson, George W	Winamac		1876
Thompson, W. H	Winamac		1876
Wear, W. H	North Judson		1880

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PUTNAM COUNTY.

Officers.

Samuel Fisher.....President.
L. A. Hinton.....Vice-President.
L. M. Hanna.....Secretary.
G. C. Smythe.....Treasurer.

Censors.

E. B. Evans. R. F. Stone. C. B. McNary.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Allen, H. P.	Reelsville		1877
Bence, G. W.	Greencastle		1879
Baker, P. S.	Greencastle		1880
Cline, L. C.	Bainbridge		1879
Cross, J. B.	Bainbridge		1877
Cully, John F.	Bainbridge		1880
Dunnington, R. C.	Bainbridge		1877
Dunnington, Andrew	Cloverdale		1877
Devore, H. V.	Greencastle		1880
Evans, E. B.	Greencastle		1877
Ellis, H. E.	Greencastle		1877
Fordice, H. C.	Russellville		1879
Fisher, Ben. T.	Belle Union		1877
Fisher, Samuel	Greencastle		1877
Farrow, A. C.	Greencastle		1877
Hanna, L. M.	Greencastle		1877
Hinton, S. A.	Reelsville		1877
Hall, J. T.	Morton	Dropped	1878
McNary, C. B.	Filmore		1877
Owsley, W. J.	New Maysville		1878
Smythe, G. C.	Greencastle		1877
Stone, R. F.	Bainbridge		1879
Preston, A. G.	Greencastle		1877
Preston, J. L.	Cloverdale		1877
Taylor, Charles F.	Indianapolis		1878
Zane, T. M.	Manhattan		1878

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RANDOLPH COUNTY.

Officers.

John Heiner.....President.
J. T. Chenoweth.....Vice-President.
J. J. Evans.....Secretary.
A. H. Farquhar.....Treasurer.

Censors.

Wm. Commons. L. N. Davis. J. E. Markle.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Arthur, C. S	Portland		1880
Berry, J. S	Spartansburg		1879
Blair, J. S	Lynn		1879
Bennett, J. E	Hillgrove	Ohio	1877
Commons, Wm	Union City		1876
Chenoweth, J. T	Winchester		1876
Chenoweth, N. T	Windsor		1876
Davis, R. P	Red Key		1876
Davis, L. N	Farmland		1876
Evans, C. S	Union City	Suspended	1878
Evans, G. S	Saratoga	Restored	1878
Evans, J. J	Winchester		1876
Farquhar, A. H	Ridgeville		1876
Ferguson, D	Union City		1876
Ford, R	Saratoga		1878
Good, A. H	Bloomingsport		1876
Heiner, John	Arba		1876
Harrison, H	Union City		1876
Harrison, R. N	Winchester		1877
Hamilton, R	Lynn		1878
Hollinger, I. N	Harrisonville	Restored	1880
Keener, J. M	Farmland		1880
Markle, J. E	Winchester		1876
Smith, W. G	Winchester		1876
Yergan, H. H	Union City		1878

RUSH COUNTY.

Officers.

Wm. H. Smith.....President.
A. E. Graham.....Vice-President.
Samuel W. McMahan.....Secretary.
John Moffatt.....Treasurer.

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Censors.

Marshall Sexton. James W. Green. John Moffett.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Arnold, John	Rushville		1876
Arnold, W. W	Rushville		1876
Axline, J. A	Raleigh		1876
Bogart, H. J	Carthage		1879
Derbyshire, E. R	New Salem		1876
Dillon, J. C	Knightstown		1876
Ely, J. M	Palestine		1876
Eskew, W. C	Glenwood		1880
Graham, A. E	Richland		1876
Graham, R. F	Richland		1880
Green, J. W	Arlington		1876
Hargrave, W. S	New Salem		1876
Inlow, J. E	Homer		1878
Inlow, J. J	Manilla		1876
McGaughey, J. E	Arlington		1876
McMahan, S. W	Rushville		1879
Moffett, John	Rushville		1876
Parsons, C. H	Rushville		1878
Pugh, W. A	Rushville		1876
Rayburn, I. W	Andersonville		1880
Sexton, Marshall	Rushville		1876
Sisse, R. W	Orange		1876
Smith, W. H	Rushville		1876
Spilman, F. J	Andersonville		1876
Spurrier, J. H	Rushville		1876
Thomas, S. C	Milroy		1876

STEUBEN COUNTY.

Officers.

Sol. A. Wood.....President.
Daniel W. Fenton.....Vice-President.
Daniel B. Griffin.....Secretary.
Theodore F. Wood.....Treasurer.

Censors.

Hugh D. Wood. Marcus F. Crain. Daniel B Griffin.

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Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Abbott, Lyman	Fremont		1875
Bates, Charles	Nettle Lake, O.		1876
Blue, J. B.	Flint		1875
Brown, John C.	Turkey Creek		1878
Brown, David N. E.	Hamilton		1879
Buchman, Alpheus P.	Fort Wayne		1880
Crain, Marcus F.	Angola		1875
Dills, Thomas J.	Fort Wayne		1880
Fenton, Daniel W.	South Camden, Mich.		1880
Fuller, Stephen H.	Pleasant Lake		1877
Griffin, Daniel B.	Angola		1870
Lipes, Robert F.	Hudson		1880
Morrison F. Bay	Hamilton		1879
Mayres, Herschel S.	Fort Wayne		1880
Porter, Miles F.	Fort Wayne		1880
Proegler, Carl	Fort Wayne		1880
Simmons, Edward B.	Angola		1880
Stough, Jay H.	Hudson	Withdrawn	1879
Sweringen, Hiram V.	Fort Wayne		1880
Wilkinson, J. J.	Orland		1874
Wood, Hugh D.	Angola		1863
Wood, Theodore F.	Metz		1865
Wood, Sol. A.	Angola		1877
Woodworth, Benjamin S.	Fort Wayne		1877

TIPPECANOE COUNTY.

Officers.

W. W. Vinnedge.....President.
William F. Cady.....Vice-President.
C. M. Ransdell.....Secretary.
S. T. Yount.....Treasurer.

Censors.

H. W. Wiley. G. F. Beasley. A. T. Payne.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Beasley, George F.	Lafayette		1877
Cady, William F.	Lafayette		1877
Hanna, William P.	Lafayette		1878

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Moffitt, W. R	Chauncy		1880
Payne, A. T.	Transitville		1879
Ramsdell, Charles M	Lafayette		1877
Rush, M. A.	Battle Ground		1879
Shill, C. W	Lafayette		1878
Spalding, Joseph	Chauncy		1878
Vinnedge, William W	Lafayette		1877
Walker, William S	Lafayette		1878
Webster, John C	Romney		1878
Wells, A. A	Stockwell	Withdrawn	1878
Wiley, Harvey W	Lafayette		1877
Yount, Silas T	Lafayette		1877

TIPTON COUNTY.

Officers.

Wm. M. Glass.....President.
A. J. Barker.....Vice President.
J. A. Bouser.....Secretary.
W. N. Heath.....Treasurer.

Censors.

J. C. Driver. D. P. Rubush. A. M. Vickrey.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Austin, Winson	Windfall		1876
Barker, A. J.	Tipton		1874
Bouse, J. A.	Goldsmith		1879
Campbell, ———	Normandy		1880
Collins, G. M.	Tipton		1874
Doan, N. W.	New Lancaster		1874
Driver, J. C.	Shielville		1874
Evans, H. G.	Tipton		1875
Glass, Wm. M.	Shielville		1874
Gossett, J. M	Normandy		1877
Heath, W. N	Sharpsville		1874
Newcomer, M. V. B	Tipton		1874
Rubush, D. P.	Sharpsville		1875
Vickrey, A. M.	Tipton		1874
Vickrey, M. V. B.	Tipton		1874

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VANDERBURG COUNTY.

Officers.

C. P. Bacon ..... President.
G. B. Walker ..... Vice-President.
C. E. Lining ..... Secy. and Treas.

Censors.

Wm. A. Wheeler. W. B. Rose. B. J. Day.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Achilles, F. W	Evansville		1879
Bacon, C. P	Evansville		1878
Bray, M. J	Evansville		1878
Carter, E. Lewis	Evansville		1879
Compton, J. W	Evansville		1878
Day, B. J	Evansville		1879
Dow, John L	Evansville		1879
Harper, J. E	Evansville		1880
Irwin, J. W	Evansville		1878
Jones, H. G	Evansville		1879
Kennedy, D. H	Evansville	Withdrawn	1879
Lining, C. E	Evansville		1878
Linthicum, E	Evansville,		1878
Owen, A. M	Evansville		1879
Pirnat, John	Evansville		1879
Rose, W. B	Evansville		1879
Walker, G. B	Evansville		1879
Wheeler, Wm. A	Evansville		1878
Wilde, C. A	Evansville		1878

VIGO COUNTY.

Officers.

J. D. Mitchell ..... President.
Charles Gerstmeyer ..... Vice-President.
Wm. H. Humphrey ..... Secretary.
Wm. P. Armstrong ..... Treasurer.

Censors.

Stephen J. Young. B. F. Swafford. L. J. Weinstein.

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Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Armstrong, Wm. P	Terre Haute		1878
Black, R. C	Terre Haute		1879
Carson, L. E	Prairieton		1878
Crapo, G. W	Terre Haute		1879
Crapo, J. R	Terre Haute		1878
Forsythe, Mary	Terre Haute		1878
Gerstmeyer, Chas	Terre Haute		1874
Glover, E. E	Prairieton		1878
Hickson, G. W	Riley		1874
Humphrey, Wm H	Terre Haute		1878
Insley, W. Q	Terre Haute		1874
Kuster, C. E	Terre Haute		1874
Long, J. H	Terre Haute		1874
Mann, H. D	Terre Haute		1874
McClain, Leslie	Terre Haute		1878
McGrew, J. E	Terre Haute		1880
MITCHELL, J. D	Terre Haute		1874
Mitchell, O	Terre Haute		1879
Moorhead, T. W	Terre Haute		1878
Pinson, A. J	Libertyville		1878
Poindexter, J	Bloomington		.....
Preston, S. C	Terre Haute		1874
Roberts, W. H	Terre Haute		1874
Scovill, J. T	Terre Haute		1880
Stetson, E. F	Terre Haute		1879
Stevenson, W. M	Terre Haute		1874
Swafford, B. F	Terre Haute		1874
Thomson, J. C	Terre Haute		1874
Thralls, R. T	Terre Haute		.....
Watkins, S	Terre Haute		1877
Weinstein, L. J	Terre Haute		1879
Willien, L. J	Terre Haute		1874
Worrell, J. P	Terre Haute		1874
Young, S. J	Terre Haute		1874

WABASH COUNTY.

Officers.

S. G. Thompson ..... President.
James L. Dicken ..... Secretary.
A. J. Smith ..... Treasurer.

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Censors.

F. S. C. Grayston. O. O'Neal. F. R. Brady.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Adar, Henry	Somerset		1871
Armstrong, Wm. G.	Lafountain		1855
Brady, Thompkins R	Lincolnville		1871
Bloomer, F. H.	Pleasantview		1873
Blount, R. F.	Wabash		1865
Burns, A. M.	Lafountain		1880
Brown, G. W.	Somerset		1880
Chenneworth, P. G.	Mt. Etna		1877
Dicken, James L.	Wabash		1854
Dicken, C. L.	Urbana		1879
Donaldson, E. F.	Wabash		1865
Ford, J	Wabash		1854
Ford, J. H	Wabash		1872
Grayston, F. S. C	Huntington		1856
Grayston, B. H. B	Huntington		1879
Hale, M. M	Lagro		1871
Holmes, C. H	Wabash		1879
Jones, J. H	Roann		1878
Kidd, G. P.	Roann		1874
Kautz, J.	Dora		1873
Lower, O. M.	North Manchester		1876
Mendenhall, W. T.	North Manchester	Dropped	1871
Mitchell, S. P.	Etna		1877
Minnich, H. R.	Treaty		1879
Mooney, H. C.	Laketon		1876
Murphy, R.	Roann		1871
Moore, P. G.	Rich Valley		1871
O'Neal, L.	Somerset		1859
O'Neal, O.	Lafountain		1879
Peters, E. P.	Wabash		1855
Peters, G. P.	Wabash		1878
Pickering, Samuel	Lafountain		1880
Renner, J. H	Lagro		1872
Shoffer, Philip	Bracken		1878
Smith, A. J.	Wabash		1871
Studley, J. W.	Lafountain		1878
Thomas, E. B.	Lagro		1854
Thomas, A. McD		Removed	1855
Thompson, S. G.	Wabash		1858
Tembly, G. D	Bracken		1878
Teague, T. C.	Rich Valley		1880

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Waddle, C.	North Manchester		1875
Winton, H.	North Manchester		1873
Williams, O. B.	Antioch		1878

WARREN COUNTY.

Officers.

A. M. Porter.....President.
O. D. Benson.....Secretary.
C. H. Hoffman.....Treasurer.

Censors.

E. R. Birch. S. C. Fenton. J. Ross.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Benson, O. D.	Williamsport		1879
Birch, E. R.	State Line		1876
Fenton, S. C.	Pine Village		1876
Hoffman, C. H	Rainsville		1876
McMullen, J. W	Pine Village	Withdrawn	1876
Moore, A. V.	Green Hill	Withdrawn	1878
McAdams, A. J.	Green Hill		1878
Osborn, C. W	Rainsville	Withdrawn	1875
Osborn, S. N.	Rainsville	Withdrawn	1875
Porter, A. M	State Line		1875
Ross, Justin	Williamsport		1875
Rice, J. F	Attica	Withdrawn	1879

WARRICK COUNTY.

Officers.

W. B. Scales.....President.
T. B. Jones.....Vice President.
T. M. Howard.....Secretary.
W. L. Barker.....Treasurer.

Censors.

S. F. Tyner. C. J. Keegan. D. A. DeForrest.

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Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Barker, William L.	Bloomfield		1877
Daily, James M	Rockport		1877
Daily, William W	Boonville		1877
DeForrest D. A	Boonville		1877
Hargan, T. J	Boonville		1877
Howard, T. M.	Boonville		1878
Hunt, W. A.	Lynnville	Suspended	1877
Hooker, H. H.	Elberfield	Suspended	1877
Jones, T. B	Lynnville		1877
Keegan, C. J	Canal		1877
McCoy, T. J.	Eby	Suspended	1877
McCoy, L. H	Lake	Suspended.	1878
McCoy, J. S.	Elberfield	Suspended	1878
Reavis, W. J	Lake	Suspended	1878
Scales, W. B.	Boonville	Suspended	1877
Smith, Thomas	Canal	Suspended	1877
Tyner, S. L.	Lynnville		1877
Temple, J. R	Yankeetown		1878
Wilson, W.	Yankeetown		1877

WAYNE COUNTY.

Officers.

J. W. Rutledge ..... President.
J. E. Taylor ..... Vice-President.
J. R. Weist ..... Secretary.

Censors.

J. Pennington. James F. Hibberd. Joseph Iutzi.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED
Blount, C. N	Hagerstown		1875
Boyd, S. S	Dublin		1875
Buchanan, A. T	Cambridge City	Withdrawn	1875
Bula, R. W	Richmond	Withdrawn	1878
Dailey, J. J	Milton	Dead	1875
Gaus, P. T	West Florence, Ohio		1875
Hadley, E	Richmond		1875
Hobbs, M. W	Richmond	Suspended	1875
Hibberd, James F	Richmond		1877
Huff, O. N	Fountain City		1879

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NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Iutzi, Joseph	Richmond		1878
Johnson, L. C	Fountain City		1879
Kelsey, L. S	New Madison, Ohio		1880
Kersey, Charles A	Richmond	Withdrawn	1876
Mauk, J. R	East Germantown		1875
McIntyre, J. H	Richmond	Withdrawn	1877
PENNINGTON, J	Milton		1875
Rutledge, J. W	Cambridge City		1875
Sawyer, E. O	Richmond		1880
Sawyer, Sarah R	Richmond		1880
Summers, J. B	Milton		1879
Swallow, E	East Germantown		1875
Sweeney, S. F	Milton		1875
Taylor, J. E	Richmond		1878
Tillson, H	Centerville		1876
Thomas, Mary F	Richmond		1876
WEIST, J. R	Richmond		1876
Wrede, F	Richmond		1880

WELLS COUNTY.

Officers.

C. T. Melsheimer.....President.
L. A. Spaulding.....Secretary.
J. I. Metts.....Treasurer.

Censors.

L. Mason. A. G. Gorrell. G. Fulton.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Fulton, George	Murray		
Fulton, J. C	Murray		
Gorrell, A. G	Bluffton		
Horton, E. R	Bluffton		
Mason, L	Bluffton		
Melsheimer, C. T	Bluffton		
Metts, J. I	Ossian		
Spaulding, L. A	Barber's Mills		

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WHITE COUNTY.

Officers.

John Medaris.....President.
A. B. Jones.....Vice-President.
J. A. Wood .....Secretary and Treasurer.

Censors.

A. B. Jones. R. S. Black. R. M. Delzell.

Members.

NAMES.	RESIDENCE.	REMARKS.	ADMITTED.
Ballon, A. B.		Suspended	
Black, R. S.	Idaville		
Delzell, R. M.	Reynolds		
Didlake, M. T.	Walcott		
Grant, T. A	Walcott		
Harcourt, John			
Jones, A. B.			
Maxwell, S. S.	Remington	Suspended	
Medaris, John	Brookston		
Spencer, William	Monticello		
Wood, J. A.	Monticello		

NOTE.—Those whose names are in SMALL CAPS have been Presidents or Vice Presidents of the State Society.

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